IMPACT OF HAZARDOUS ALCOHOL CONSUMPTION ON FAMILY FUNCTIONING IN RURAL SOUTH INDIA- A CROSS SECTIONAL STUDY

DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY, CHENNAI, FOR THE DEGREE OF MD BRANCH-XV (COMMUNITY MEDICINE) EXAMINATION TO BE HELD IN APRIL, 2017

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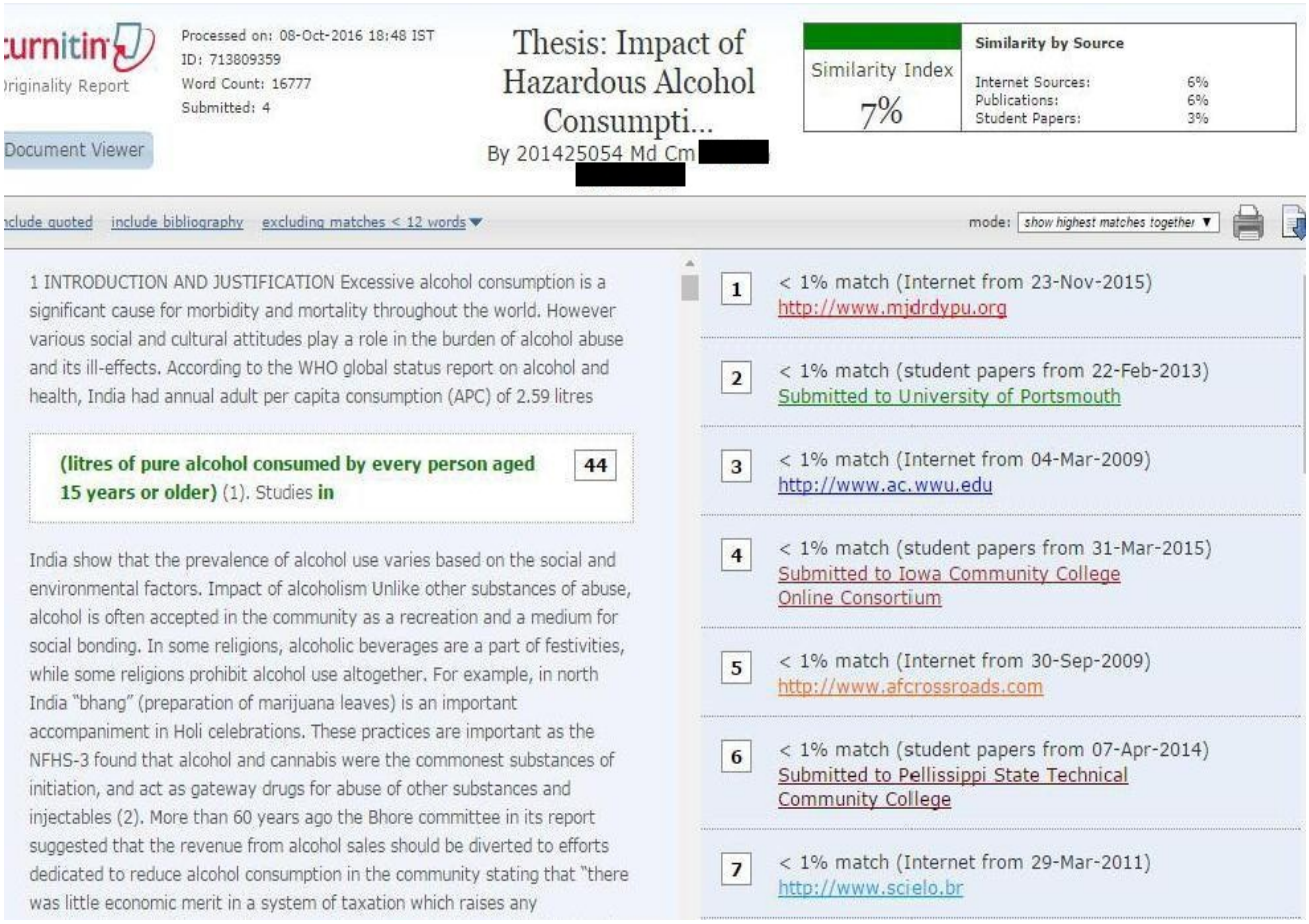

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1 INTRODUCTION AND JUSTIFICATION Excessive alcohol consumption is a significant cause for morbidity and mortality throughout the world. However various social and cultural attitudes play a role in the burden of alcohol abuse and its ill-effects. According to the WHO global status report on alcohol and health, India had annual adult per capita consumption (APC) of 2.59 litres

(litres of pure alcohol consumed by every person aged 15 years or older) (1). Studies **in** 44

India show that the prevalence of alcohol use varies based on the social and environmental factors. Impact of alcoholism Unlike other substances of abuse, alcohol is often accepted in the community as a recreation and a medium for social bonding. In some religions, alcoholic beverages are a part of festivities, while some religions prohibit alcohol use altogether. For example, in north India "bhang" (preparation of marijuana leaves) is an important accompaniment in Holi celebrations. These practices are important as the NFHS-3 found that alcohol and cannabis were the commonest substances of initiation, and act as gateway drugs for abuse of other substances and injectables (2). More than 60 years ago the Bhore committee in its report suggested that the revenue from alcohol sales should be diverted to efforts dedicated to reduce alcohol consumption in the community stating that "there was little economic merit in a system of taxation which raises any

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This is to certify that " IMPACT OF HAZARDOUS DRINKING ON FAMILY FUNCTIONING IN RURAL SOUTH INDIA - A CROSS SECTIONAL STUDY" is a bona fide work of Dr. Martina Shalini A J in partial fulfillment of the requirements for the M. D Community Medicine examination (Branch XV) of the Tamilnadu Dr. M. G. R. Medical University, Chennai, to be held in April, 2017.

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DECLARATION

I hereby declare that the investigations that form the subject matter for the thesis entitled "**IMPACT OF HAZARDOUS ALCOHOL CONSUMPTION ON FAMILY FUNCTIONING IN RURAL SOUTH INDIA- A CROSS SECTIONAL STUDY"** was carried out by me during my term as a post graduate student in the Department of Community Health, Christian Medical College, Vellore. This thesis has not been submitted in part or full to any other university.

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ACRONYMS

APC - Adult per capita consumption of pure alcohol

APGAR - Adaptability, Partnership, Growth, Affection, and Resolve

AUDIT - Alcohol Use Disorders Identification Test

CHAD - Community Health And Development

CMC - Christian Medical College

DALY - Disability Adjusted Life Years

GDP - Gross Domestic Product

ICD - International Classification of Diseases

IMFL - Indian Made Foreign Liquor

IRB - Institutional Review Board

NFHS - National Family Health Survey

PTCHW- Part Time Community Health Worker

QOL - Quality Of Life

TASMAC- Tamilnadu State Marketing Corporation

WHO - World Health Organisation

WHO-QOL BREF – World Health Organisation Quality Of Life Brief form

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1 INTRODUCTION AND JUSTIFICATION

Excessive alcohol consumption is a significant cause for morbidity and mortality throughout the world. However various social and cultural attitudes play a role in the burden of alcohol abuse and its ill-effects. According to the WHO global status report on alcohol and health, India had annual adult per capita consumption (APC) of 2.59 litres (litres of pure alcohol consumed by every person aged 15 years or older) (1). Studies in India show that the prevalence of alcohol use varies based on the social and environmental factors.

Impact of alcoholism

Unlike other substances of abuse, alcohol is often accepted in the community as a recreation and a medium for social bonding. In some religions, alcoholic beverages are a part of festivities, while some religions prohibit alcohol use altogether. For example, in north India "bhang" (preparation of marijuana leaves) is an important accompaniment in Holi celebrations. These practices are important as the NFHS-3 found that alcohol and cannabis were the commonest substances of initiation, and act as gateway drugs for abuse of other substances and injectables (2).

More than 60 years ago the Bhore committee in its report suggested that the revenue from alcohol sales should be diverted to efforts dedicated to reduce alcohol consumption in the community stating that "there was little economic merit in a system of taxation which raises any considerable part of the public revenue from the

sale of alcohol" while ignoring the considerable damage caused by excessive consumption (3). But in spite of several studies identifying alcohol consumption as the cause of significant mortality and morbidity, very few checks are in place to monitor and reduce alcohol consumption in the community. Existing laws for sale of alcohol including restriction of sales to minors, sale timings and penalty for drunken driving remain on paper with inadequate enforcement in practice. Like other substances of abuse, alcohol is a cause for mortality, morbidity and significant economic loss. It is directly through loss of productivity and indirectly through the damage caused by accidents and violence aggravated by its consumption.

The immediate family bears the brunt of financial and psychological stress due to alcoholism. However, despite several studies on the effects of alcoholism, very few studies have tried to assess the dynamics of the entire family and how the severity of alcoholism affects family functioning as a unit. This study aims to bridge this gap in knowledge. By understanding the impact of hazardous alcohol consumption on spouses and children, we aim to provide the basis for developing interventions and strategies to help affected families and also address family issues in programmes aimed at alcoholics or hazardous drinkers.

2 AIM AND OBJECTIVES

Aim

To assess the impact of hazardous drinking on family functioning.

Objectives

1) To estimate the prevalence of hazardous drinking among married men in the 25-60 age group in Kaniyambadi block.
2) To study the effect of hazardous alcohol consumption on family dysfunction.

3 LITERATURE REVIEW

3.1 ALCOHOL AS A PUBLIC HEALTH PROBLEM

Substance use disorders, especially alcohol use disorder, affect the individual and society in many ways. The direct link between alcohol abuse and a range of physical health problems like liver diseases, cardiovascular diseases, some cancers and a range of behavioral disorders, is well documented. Alcohol abuse is currently linked to over 200 diseases and injuries (4). In 2012, around 5.1% of the global burden of disease was estimated to be due to alcohol use disorders (1). Morbidity and mortality risks due to alcohol were higher in lower income countries, compared to higher income countries. The above estimate communicates only part of the impact of harmful use of alcohol.

Harmful use of alcohol also creates considerable negative health and social consequences, for people other than the drinker. These effects are difficult to measure and hence are not included in estimates of impact of alcohol use disorders (5). While the deleterious health impacts of hazardous drinking are well known, the significant social and economic consequences are not sufficiently studied.

3.1.1 Prevalence and patterns of alcohol use.

3.1.1.1 World

Alcohol is, both the most consumed beverage in the world and the most abused substance. The amount of alcohol consumed per adult (more than 15 years of age),

is at 6.13 litres of pure alcohol (1). To give context to that data, 1 litre of pure alcohol is equivalent to 20 litres of beer, 8.33 litres of wine or 2.5 litres of spirits (6). This is an estimate of both recorded and unrecorded alcohol consumption in the world. Out of this, 28.6% was unrecorded alcohol consumption. The proportion of unrecorded alcohol consumption was higher in low income countries, posing the additional health risks (7). Since 1990 the amount of alcohol consumed in the South east Asian region has increased by 68%(8).

The type of alcoholic beverages consumed also differs from country to country. The most common beverages are beer, wine and spirits. Beer which has the least alcohol content is also one of the oldest beverages. It is produced by fermenting cereals, most commonly malted barley, while wine is produced by fermenting grapes. Spirits are distilled alcoholic beverages which have an alcohol content by volume of at least 20%. This includes drinks like vodka, whiskey, brandy, gin, tequila etc. (9).

Beer is the most consumed alcoholic beverage in the region of the Americas accounting for 54.7% of Adult per capita consumption(APC). The most common drinks in the European region were beer and wine. In contrast, almost 71% of the APC in the SEAR region was in the form of spirits (distilled drinks) (1).

3.1.1.2 India

The amount of alcohol consumed in India has been steadily increasing (10). According to the National Household Survey of Drug use, 21% of adult males in India consume alcohol (11). However, other studies reveal that the proportion varies in different population groups. A study done to estimate the prevalence of alcohol

consumption among tea plantation workers in Assam, found that 69.3% of males and 54% of females used alcohol (12). A study on industrial workers in Goa, revealed that 68.6% of that population consumed alcohol. One third of those who consumed alcohol in this population were hazardous drinkers (13). A similar study in Pondicherry estimated prevalence of alcohol consumption at 59.6%(14).

A study in Karnataka which only included men in the age group 16-49 years, found alcohol usage to be around 38.1%, and more than half of those who used alcohol, were problem drinkers (15). A study in Kolkata slum area reported that while 65% of the respondents were current alcohol consumers only 8% of the current drinkers had a harmful or hazardous drinking pattern (16). A study in the Bangalore which examined alcohol in the context of neighborhood found slum and rural areas had higher prevalence of frequent heavy drinkers. However infrequent heavy drinkers were more common in urban areas (17).

The prohibition movement instituted during Independence, survived till the mid-1960s, when it was reverted by several states (18). Gujarat was the only state to retain prohibition. There was a second wave of prohibition laws, enacted in the 1990s. However, these were soon rolled back as governments lost nearly 20-25% of alcohol related revenue, and an increase in the sale of illicit liquor (19). Recently Kerala and Bihar have initiated prohibition measures. The concept of prohibition remains enshrined in the Indian Constitution, with Article 47 declaring that the State should endeavor “to bring about the prohibition of intoxicating drugs which are injurious to health” (20). However, alcohol sales are still a major source of revenue in several states including Tamil Nadu (21).

Table 3-1: Common alcoholic beverages in India *(22)*

Alcoholic beverage	Source	Percentage of alcohol by volume	Standard drink
Beer	Cereals	3-4	300-400 mL
Wine	Grapes	5-13	100-200mL
Fortified wine	Grapes	14-20	60-90mL
Distilled spirits	Fruits, cereals, sugarcane	40	30 mL
Arrack	Coconut flowers, sugarcane	33	40 mL
Toddy	Palm sap, coconut flowers	5-10	200 mL
IMFL	Molasses, grain	42	30 mL

3.1.1.3 Tamil Nadu

The prevalence of alcohol consumption varies within the state. A study done in Villupuram district in 2012, shows a prevalence of alcohol consumption of 9.4% and a hazardous drinking prevalence of 3.7% (23). A previous study done in rural region in Vellore, in 2008 shows that the prevalence of alcohol consumption was 46.7 %, with hazardous drinking at 14.2% (24). A 2011 study conducted in an urban slum in Vellore, showed the prevalence of alcohol consumption was 46.1%, while the prevalence of hazardous drinking was 31.4%(25).

The most consumed alcoholic beverage in urban areas is Indian made foreign liquor, compared to rural areas where country liquor used to be the preferred drink (18). This trend has changed in recent years with the easy availability of Indian Made Foreign Liquor(IMFL), through the government run TASMAC retail shops. This change has also reduced the consumption of illicit and illegal liquor, but has increased the overall consumption of alcohol (26).

Tamil Nadu State Marketing Corporation (TASMAC)

Tamil Nadu was one of the earliest states to enforce prohibition as early as 1937. Since then, the prohibition has been lifted intermittently depending on government policies. In 1981, two corporations were formed to regulate alcohol production and sales in the state: The Tamil Nadu Spirit Corporation, which was responsible for the production of alcoholic beverages and the Tamil Nadu State Marketing Corporation, which was responsible for regulating sales of alcohol in the state. While the Tamil Nadu Spirit Corporation was closed down within a few years, TASMAC took over the entire wholesale distribution of alcohol in the state. After multiple incidents involving methanol consumption which resulted in manifold casualties, the Tamil Nadu State Marketing Corporation took over control of all retail alcohol sales and currently has monopoly over all legal alcohol sales in the state (27).

3.1.2 Alcohol related problems

Alcohol related problems are responsible for more than 4% of Disability Associated Life Years lost, accounting for 69,375 DALYs a year (1). 38.8% of these are due to

neuropsychiatric conditions related to alcohol misuse. Alcohol related problems have a wide range, and depend on a variety of factors, such as volume and pattern of drinking.

For most diseases causally associated with alcohol, there is a dose response relationship. In addition to the volume, the pattern of consumption also affects the consequences of drinking (28). Injuries and cardiovascular morbidity appear to depend more on the pattern of drinking. Heavy episodic drinking negates the benefit of low risk drinking patterns on cardiovascular diseases. Other factors like economic and cultural factors also determine the extent of harm caused by alcohol misuse.

3.1.2.1 Physical health consequences

Alcohol related problems are the eighth highest cause of mortality throughout the world, and is estimated to be responsible for 25% of road accidents and 40 % of accidents at work (29). Alcohol is also named a necessary cause in 30 ICD disease codes and is a component cause in at least 200 disease codes (30).

a. Neuropsychiatric conditions

Alcohol use disorders are a major cause of alcohol related morbidity. These disorders are chronic in nature, and the recovery is characterized by repeated cycles of periods of abstinence and relapse (31). There is a need for vigilance by the patients and the

treating professionals to disrupt this vicious cycle of abstinence, relapse and treatment. Several studies show that affective disorders, especially major depression, are linked to alcohol dependence (32), (33). While both alcohol dependence and major depression may be due to common social, genetic and environmental factors, a few longitudinal studies demonstrate a causal link between alcohol dependence and depression (34). However, the morbidity and mortality due to affective disorders are not included in the alcohol attributable disease burden because of the complex causal pathways (35).

b. Gastrointestinal diseases

Alcohol is a major cause in certain gastrointestinal system diseases like liver cirrhosis and pancreatitis. There is an exponential increase in the risk of liver cirrhosis and pancreatitis with higher levels of alcohol consumption (36), (37), (38).

c. Cancer

Alcohol acts as a carcinogen in the epidemiology of cancers of colorectum, larynx, pharynx, oesophagus and oral cavity (39), (40). Higher quantities of alcohol consumption are also implicated in the etiology of cancers of breast and liver (41), (42).

d. Cardiovascular diseases

Alcohol is significantly linked to coronary artery disease. It adversely affects blood supply to the heart, heart rate and also beat variability. Alcohol consumption also increases risk of hypertension, atrial fibrillation and hemorrhagic stroke (43). Light

to moderate red wine consumption has been shown to have beneficial effects on atherosclerotic processes, by inhibiting atherogenesis. Several components of red wine, especially alcohol, resveratrol, and polyphenolic compounds, also decrease oxidative stress (44). However, this beneficial effect disappears with higher alcohol consumption (45).

e. Injuries

Both intentional and unintentional injuries are related to alcohol consumption and hazardous drinking (46). Unintentional injuries due to road traffic accidents, work place accidents etc., are related to hazardous drinking patterns. Estimates place alcohol as being the cause for 20% of road accident related head injuries admitted in hospitals (1). Intentional injuries due to violence and self-harm attempts are linked to hazardous drinking patterns. Spouses of alcoholics also experience domestic violence more often.

f. Others

Fetal alcohol spectrum disorder associated with maternal alcohol consumption during pregnancy is characterized by distinctive facial features, intellectual and growth retardation and behavioral disorders (47), (48). Alcohol is also known to affect the bone mineral density and the balance between oxidants and antioxidants in the body (49). Alcohol consumption is implicated in audio vestibular diseases (50). Binge drinking can cause rhabdomyolysis, and in consequence acute tubular necrosis and acute renal failure (51). It also worsens diabetes and makes sugar control difficult, by its actions on liver function (52).

While alcohol has no direct causal link to infectious diseases, excessive consumption weakens immune system and increases risk of diseases like tuberculosis and pneumonia especially in immunocompromised patients (53), (54). Alcohol also affects compliance of medicines in diseases like tuberculosis and acquired immunodeficiency syndrome and hence affects the outcome (55), (56).

3.1.2.2 Social consequences of alcohol

Alcohol is often a cause for family discord and social disturbances. The impact of alcohol on society is often tied to the responses and attitudes of other people. Intoxication, dependence and withdrawal states often result in poor performance at work and in relationship obligations. Alcohol affects a person's competence in social and family responsibilities, impacts the quality of parenting and often causes dysfunction in relationships. Alcohol misuse by a person leads to neglect and abuse of their dependents and also affects others around. A study which examined the relation between alcohol consumption and violence among industrial workers in Goa, concluded that men with harmful use of alcohol were more prone to be perpetrators of violence (57). Often people living with alcohol use disorders, especially those with dependence symptoms, are excluded and marginalized by the society. Several surveys have shown that alcohol users receive low priority in health care delivery systems, which is often due to health workers' attitude towards drinking (58).

Domestic violence is a societal problem which is rooted in societal norms, cultural attitudes and a deeply paternalistic mindset (59). In fact, both men and women throughout the country, believed that wife-beating was justified under certain circumstances. Very often, financial and work related stress is used to justify domestic violence. Also the fact that women have insufficient support systems may contribute to the widespread prevalence of domestic violence. Though domestic violence is considered a separate entity, studies indicate that intimate partner violence is exacerbated by alcohol. On a national level, 46% of women reported having experienced violence when their partners consumed alcohol. Alcohol consumption increased the probability of domestic violence by 17%. Even in Gujarat, where alcohol is prohibited, alcohol increased the probability of women experiencing violence (both physical and sexual) at the hands of a partner by 26% (60).

3.1.2.3 Economic consequences of alcohol

According to a systematic review published in 2009, the cost of alcohol misuse on the society is significant, and can be up to 5.44% of GDP. The revenue from sales and excise tax on alcohol often conceals the underlying adverse financial impact on the society. This includes direct costs like health care cost, research and prevention costs, costs of crime and law enforcement, costs of property damage or loss and indirect costs due to premature mortality, reduced productivity, incarceration, loss of employment or early retirement etc. (61).

The economic impact of alcoholism on a single family can be extremely high. In India household expenditure on alcohol varies between 3- 45% of their income. Frequent drinkers in Delhi spent almost 24% of their incomes on alcohol alone (62). Healthcare costs for families with an alcoholic member can be twice as high as families without an alcoholic member (63). In addition to healthcare costs, the financial burden is further increased by losses to family income caused by absenteeism and loss of employment. In families whose earnings are already low, heavy drinking further ruins the financial development and results in heavy debts (64).

3.1.3 Definitions

1. **Hazardous drinking**

"is a pattern of alcohol consumption, that increases the risk of harmful consequences for the user or others". Hazardous drinking patterns are of public health significance, despite the absence of any current disorder in the individual user.

2. **Harmful use of alcohol**

refers to" alcohol consumption that results in consequences to physical and mental health".

3. **Alcohol dependence**

refers to "a spectrum of symptoms that develop after repeated alcohol use. It includes a strong desire to consume alcohol, difficulty limiting intake, persisting

consumption in spite of problems, a higher priority given to alcohol, increased tolerance and also physical withdrawal symptoms" (65).

4. **Alcohol related problem**

Any of the range of problems attributable to alcohol which may be physical, mental or social (66).

3.1.4 Screening and diagnosing alcohol use disorders.

Identifying problem drinkers is necessary in several situations like the emergency room, clinics, population surveys on substance abuse etc. An array of screening instruments is available to detect and diagnose unhealthy alcohol use. A few of the important screening instruments are given below

a. **Alcohol Use Disorders Identification Test (AUDIT)**

The AUDIT is a 10 question screening instrument which is considered widely to be the most accurate in screening for alcohol use disorders. It assesses recent alcohol use, alcohol dependence symptoms, and alcohol-related problems.

It has been validated in more than six countries and multiple languages. The cross national standardization makes this instrument ideal for international use (67). The AUDIT questionnaire's total score reveals both the susceptibility to alcohol dependence and the severity of involvement (66).

Table 3-2: Cutoff scores for hazardous drinking and dependence

Score	Interpretation	Intervention

O	Abstainers	Nil
1-7	Non-hazardous drinking	Nil
8-15	Low risk of alcohol related problems	Simple advice for reduction of drinking
16-19	High risk of alcohol related problems	Brief counselling and monitoring
≥20	Alcohol dependence	Diagnostic evaluation for dependence

Table 3-3: Domains of the AUDIT Score

Domain	Questions	Content
Hazardous alcohol use	1	Frequency of drinking
	2	Typical quantity
	3	Frequency of heavy drinking
Dependence symptoms	4	Impaired control over drinking
	5	Increased salience of drinking
	6	Morning drinking
Harmful alcohol use	7	Guilt after drinking
	8	Blackouts
	9	Alcohol related injuries
	10	Others concerned about drinking

b. AUDIT-C

The AUDIT-C uses the three questions on quantity and frequency from the Alcohol Use Disorders Identification Test (AUDIT) questionnaire to screen for unhealthy alcohol use. The AUDIT- C was initially validated in war veterans, but recently

studies demonstrating validity in primary care have also shown good sensitivity and specificity. The AUDIT-C is briefer than the original AUDIT questionnaire, but needs further studies to be widely accepted (68).

c. CAGE questionnaire

The CAGE questionnaire has four questions which were designed for detection of the DSM IV criteria for substance abuse and dependence. A single affirmative answer is screen positive. However, the CAGE questionnaire alone cannot detect the entire spectrum of unhealthy use. The CAGE questionnaire can also be included in screening tests that measure other health-related behaviors like exercise and smoking (69).

d. Quantity /Frequency questionnaire

The quantity /frequency questionnaire is a rapid assessment of number of drinking days and overall quantity of alcohol consumption, through recall of the past 30 days. It has been validated for use in adolescents and adults. Unlike the AUDIT questionnaire, it does not assess for problems related to problem drinking or dependence (70). A similar questionnaire is the Fractional Graduated Frequency questionnaire (F-GF), which also has a good correlation with the AUDIT questionnaire (67).

e. The Brief Michigan Alcoholism Screening Test (BMAST)

The BMAST is a 10 question screening test, which is a subset of the Michigan Alcoholism Screening Test (MAST), which has been found reliable in both clinical and non-clinical settings. The BMAST was found as effective as the AUDIT in identifying problem drinking and dependence symptoms (71).

f. TWEAK

The TWEAK questionnaire is a five item questionnaire which screens for harmful alcohol use in women. The test was originally validated in pregnant women. TWEAK is an acronym for Tolerance, Worried relatives, Eye opener, Amnesia and Cut down. It can be self-administered or administered by health workers in face to face interview (72).

g. Alcohol, Smoking and Substance involvement screening test (ASSIST)

The ASSIST questionnaire consists of more than 80 items, and the exact number depends on the number of substances that the patient reports using in their lifetime. The length of the questionnaire prevents ASSIST from being used as a common screening test. However, it provides additional information which will be useful in further assessment and intervention. A score of 4 or above on the ASSIST questionnaire indicates harmful use of a substance, while a score of 27 and above indicates dependence. There are computerized tests available which reduce the time required for scoring (73).

3.2 ALCOHOLISM AND FAMILY

3.2.1 The family concept

While the family as a concept has existed from time immemorial, the scientific study of its role in health, is recent in origin. An individual's physical and mental health is related, at least in part to the social environment of their developmental years. A family provides this environmental, that is crucial to the biological development, mental health and nurturing of essential coping mechanisms, all of which are central to the health and functioning of an adult. A family can be identified as successful either by the success of its individual members, or its facilitation of satisfactory interaction among its members.

3.2.2 Definitions

Family

A family unit was defined by George Murdock as "a social unit identified by a common residence, financial cooperation, and reproduction (74). It includes adults of both sexes, at least two of whom maintain a socially approved sexual relationship, and one or more children, own or adopted, of the sexually cohabiting adults. This definition excludes single parent families and homosexual relationships. This definition however is considered outdated and restrictive by current experts (75).

Popenoe in his article defines a family a merely a "small domestic group of kin consisting of at least one adult and one dependent person" (76). This structural rather than a functional definition has been criticized as an extremely simplified interpretation of the modern family.

The United Nations defines a family as “those members of the household who are related, to a specified degree, through blood, adoption or marriage” (77).

Healthy family functioning is the “effective coping of the family unit with cultural, environmental, psychosocial, and socioeconomic stresses throughout the family life cycle” (78).

Family dysfunction- A dysfunctional family is one “where the relationships among family members are not conducive to emotional and physical health” (79).

3.2.3 Types of families

There are a number of different family types based on the structure.

Two Generation Families

Nuclear family refers to a small family unit with only two generations in the household: the parents and their children. While this was the traditional family type in western civilization, it is becoming increasingly common all around the world. In India, urbanization and change in the nature of interpersonal relationships, has led to a rise in the number of nuclear families. The other forms of a nuclear family are the nuclear pair (married couple without children), the broken nuclear family (a fragment of a former nuclear family, e.g., a widow with unmarried children living together) and the supplemented nuclear family (a nuclear family plus one or more unmarried / separated / widowed relatives of the parents, other than married children) (80).

The *one-parent* family refers to a family unit which consists of a single parent (divorced or unmarried) and their children.

Three Generation Families

All the types of *extended* families consist of at least three generations: the grandparents, parents, and their children. While some of the different types of extended families may be either polygynous or polygamous, most refer to monogamous relationships

The Joint family which includes both patriarchal and *matriarchal* families, consists of the grandparents, the married sons, the grandchildren, and also the grandfather's or grandmother's siblings, nieces, grandnieces, and in many cases, other kin. This type of family used to be the most common type of family around the world and still is considered to be the most traditional form of family in many countries. The head of this family is either the patriarch or matriarch, who controls the finances, makes decisions and is responsible for the welfare of the family. While the patriarchal family is most common the matriarchal family is considered to have been the norm in older civilizations. The patriarchal joint family is the most common traditional family in India, but recent trends are towards a transitional family structure due to modern principles of equality of individuals, equal status for women and increasing focus on individual aspirations (81).

The *stem* (simply called “extended”) family consists of the grandparents, one set of parents and their children. The grandfather or grandmother usually act as the head of

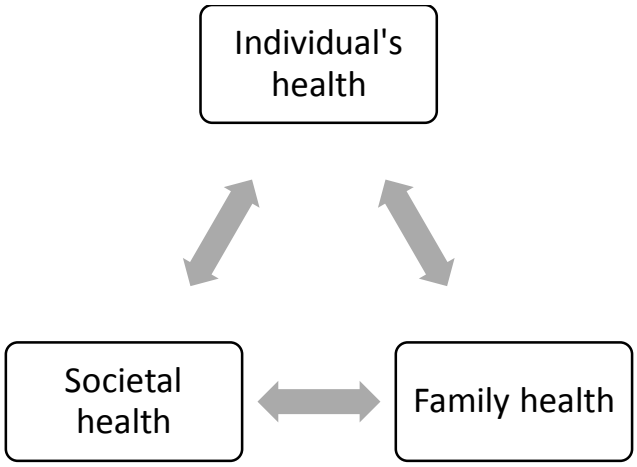
the family. The parents in this case, usually refers to the eldest son of the grandparents and his spouse, who inherit the family property and continue the family legacy. The other sons and daughters usually leave the household upon marriage, but may be provided monetary assistance or inherit a part of the family wealth. This type of family is the traditional family in central European countries, such as Austria, southern Germany, but now is common throughout the world. The *fully extended* family, also called *zadruga* in the Balkan countries has a structure similar to that of the joint family, but cousins and other kin are also included as members of the family (75).

3.2.4 Family functioning

Family functioning is one of the most under researched and one of the most misinterpreted concepts. While the concept of family is cross cultural, it is at the same time, diverse and ambiguous. However, there is an increasing need to study the role of the family in individual health and societal development. Being the society's primary unit and agency there is an urgent need to identify elements which strengthen the coping ability of families. The family unit is an individual's main source for fulfilling the common needs of survival. The family as an agency guides the individual's interaction with the society. Therefore, an individual's health and function in the society is linked inextricably with the family's function (82). While studies have examined the role of family dysfunction in mental health disorders, the influence of a functioning family on a healthy individual is often not investigated.

With the changing cultural and societal patterns bringing additional stresses in the form of varying relationship roles and alternative lifestyles, the understanding of determinants of good family function becomes essential (83).

Figure 3-1: Relationship between individual and family health.



The role of family in health is of interest to professionals in different fields, including sociologists, mental health professionals and public health professionals. A family's wellbeing in addition to influencing the health of its members, also affects the social and economic development of the society.

3.2.5 Family life cycle

The life cycle of a family involves six stages: courtship, marriage, childbirth, childhood, adolescence and old age (84), (85). Thereby the family plays a role in the formation, growth, maturation and devolution of an individual. However, an individual's different phases of the family cycle are often in different family units.

3.2.5.1 Childhood

Studies indicate that dysfunctional changes in the family during the crucial period of childhood is linked to mental health disorders (86), (87). The nature of interaction of a family with the society in general, with the neighbors, the law enforcement and public policies, defines the type of adults the children of the family will grow into. The family's interpersonal relationship impact the way children cope with stresses (88).

3.2.5.2 Parenthood

While the coping capabilities of the parents depend on their individual experiences, the coping and functioning of the family depends in major part on the parents themselves. Studies have shown the link between childhood experiences and parental behavior (89). In spite of behavioral patterns and coping skills being rooted in childhood exposure, some studies have demonstrated capacity for modification of parental behavior (90). Pathological gamblers are more likely to have experienced neglect in childhood or grown up in dysfunctional families (91).

3.2.5.3 Adolescence

The most important phase in psychological growth is adolescence. Being the period of rapid changes, both physically and psychologically, it is also the most vulnerable phase in the life cycle. A study on teenagers found that violent juvenile offenders were more likely to belong to dysfunctional families (92). A study on exposure to community violence among a sample of 263 African American and Latino males

found that youngsters from dysfunctional and struggling families were more likely to be exposed to violence in the community. However, on examining the risk of youngsters perpetrating violence, it was found that youth exposed to high levels of community violence were less likely to be perpetrators of violence, when their families functioned well across multiple dimensions, compared to youngsters whose families were dysfunctional (93). A study on lying behavior in adolescents, concluded that parent child relationships and parenting practices and communication were associated with lying and other behavioral problems in adolescence (94). In a study on eating disorders, young women who had eating disorders were more likely to secure dysfunctional scores on the family assessment device (95). Studies suggest that suicidal behavior suggest that suicidal behavior in adolescence is linked to family dysfunction (96).

3.2.5.4 Old age

There are insufficient studies on the impact of family functioning and aging. However recent studies suggest that family and emotional support has a protective effect against cognitive decline and promotes healthy aging (97).

3.2.6 Determinants of family functioning

A lot of external factors affect family functioning. Studies show a significant association between poverty and family functioning especially in the domains of communication and interpersonal relationship (98). Interpersonal communication among the family members is an important determinant of family functioning (99). A study of parent-child relationships, found that trust and good communication was

linked to the perception of good family functioning by both the parents and children (100). The presence and occurrence of crises can have a significant effect on the functioning of a family. Family crises could be due to factors external to the family, but could also be due to behavior or health status of a family member. The following table shows the various types of family crises.

Table 3-4: Classification of family crises. *(83)*

s.no	Group	Example
1	Dismemberment	Death, Separation, War
2	Accession	Pregnancy, Stepfather, Orphaned kin, adoption, Aged parents
3	Demoralization	Infidelity, Alcoholism, Drug abuse, Delinquency

3.2.7 Measurement of family functioning

Objectively measuring family health and functioning is difficult, sometimes impossible. However, several instruments have been developed to measure various aspects of family functioning.

Family assessment device (FAD)

The family assessment device was developed based on the McMaster model of family functioning and aims to measure the family's capabilities in the following domains: Problem Solving, Communication, Roles, Affective Responsiveness, Affective Involvement, Behavior Control and General Functioning (101). The FAD is validated for use among several ethnic groups (102).

Family Assessment Measure (FAM)

The family assessment measure is based on the Process Model of Family Functioning. The Process Model of family functioning studies seven key dimensions: task accomplishment, role performance, communication, affective expression, involvement, control, values and norms. The FAM can score these dimensions at three levels: the whole family, dyadic relationships and individual functioning (103), (104).

Family Adaptability and Cohesion Evaluation Scale (FACES)

Cohesion is the interpersonal attachment between family members, whereas adaptability refers to a family's capability of evolving its structure, roles and rules in the face of crises or stress. The FACES is a self-report instrument developed by Olson and his colleagues, based on the circumplex model of family functioning and is one of the standard family assessment devices used today. However as other approaches like family narratives became popular, the use of this dimension based scale has reduced in clinical practice (105).

Family APGAR

The family APGAR is a five question instrument developed by Smilkstein which measures the individual's satisfaction with the family support and functioning. The term APGAR, is an acronym of the domains under inquiry: Adaptation, Partnership, Growth, Affection and Resolve. Studies demonstrate the family APGAR has been used with families with children, teenagers and elders (106), (107), (108). While the family APGAR is no longer recommended for clinical use, it is still appropriate for screening population for dysfunction.

3.2.8 Impact of alcohol on the family

3.2.8.1 Impact on the spouses

A community study on physical spousal violence against women by Govindappa et al. showed that women whose husbands regularly consumed alcohol were more likely to experience verbal and physical abuse at the hands of their spouses. The authors in the above study conclude that the disinhibition caused by alcohol and its capacity to enhance existing feelings of frustration along with the husband's narrow perception of women's failure to comply with existing gender norms is thought to increase the occurrence of verbal and physical abuse (109).

A study in three low income areas in Mumbai found an association between pattern of drinking (i.e. heavy drinking vs overindulgent drinking) and occurrence of domestic violence. Greater exposure to alcohol in childhood was found to increase occurrence of both verbal and physical violence towards the spouse (110). A study on the predictors of spouses' alcohol related functioning and depressive symptoms

concluded that the spouses of older adults whose late-life drinking problems remit can attain normal functioning. The study also found that spouses of older adults who continued to have drinking problems experienced more depressive symptoms (111). A study by Homish et al. concluded that while spouses' marital alcohol problems affect wives' depressive symptoms, alcohol problems in women does not influence husbands' depressive symptoms (112).

3.2.8.2 Impact on marriage

Waldron et al. in a study based in Australia examined the association between history of alcohol dependence and survival of marriages. They found that moderate delays in marriage were associated with alcohol dependence for both women and men. Also among participants who have ever been married, alcohol dependence was predictive of early separation, with similar effects observed for women and men (113).

3.2.8.3 Effect on children's well-being

Klostermann K (2009) et al. in their study on children of alcoholics found that they are more likely to develop externalizing problems such as conduct disorder, oppositional defiant disorder, delinquency, and attention deficit disorder, and internalizing behaviors such as depression and anxiety. Also children of alcoholics tended to have early onset of alcohol use, and were also more likely to progress to alcohol use disorders (114). In India data from the NHFS 2 showed a significant association between household tobacco and alcohol usage and child health. Children

with alcoholic fathers were more prone to be malnourished, and also had a higher infant mortality rate. A Case Control Study on school dropouts conducted in an urban slum in Mumbai concluded that the number of school dropouts was found to be significantly higher in the children of alcohol-dependent males as compared to children with non-drinking/ non-dependent drinking pattern fathers (115). According to a study by Stanley and Vanitha C (2008), the majority of children of alcoholics manifest lower levels of self-esteem and a lesser degree of adjustment than children of abstainers (116). However, while addiction and substance abuse can sabotage family functioning, a study by Farrell et al. suggests that family cohesion can and does buffer the effects of father's problem drinking, on their children.

4 MATERIALS AND METHODS

4.1 STUDY AREA

This study was conducted in the rural revenue block of Kaniyambadi, located in Vellore district. This particular block encompasses 82 villages with a total population of around 1,13,200 permanent residents and has been served by the Community Health department of Christian Medical College through the community health and development (CHAD) programme for the past 60 years. The community health and development (CHAD) programme provides primary health care for the block through a peripheral team and subsidized secondary care through a 120 bedded hospital.

The first tier of the peripheral team is the Part Time Community Health Workers (PTCHWs), who are trained volunteers from the community and act as the first contact between the CHAD programme and the community. They also collect information regarding births, deaths, marriages, pregnancies and outcomes and report to the Health aides. Each PTCHW is responsible for a population of 1500.

The next tier are the Health aides who are staff of Christian Medical College. They live and work in the community and are responsible for a population of 5000. The health aides record disease and vital events in the community with the help of the PTCHWs. They are supervised by the Public health nurse who are each responsible for a population of 20,000. The Public health nurse is in turn supervised by a doctor of the Community health department. The services of the peripheral team consist of doctor run clinic, nurse run clinics, in addition to the home visits conducted by the health aides and PTCHWs. Doctor run clinics are held once a month and each clinic

covers four to six villages. The clinics are held in pre-determined locations and focus on antenatal care and children. Health education is provided on relevant topics. In addition, people with chronic diseases also get monthly check ups through the doctor run clinics. Nurse run clinics are held fortnightly. The public health nurse follows up patients at home to check for complications and compliance. The health aides assist the PHN in identifying high risk patients and defaulters.

The government healthcare system caters to the needs of people in the block through four Primary health care centres and 17 health Subcentres. The Government Medical College and Hospital functions as the tertiary healthcare centre. The Primary health care centres provide 24 services for childbirth, along with antenatal, immunization outreach services.

Table 4-1: Profile of CHAD peripheral team.

Team member	**Population responsible for**	**Responsibilities**
PTCHW	1000-2000	Collects information on vital and social events
HEALTH AIDES	3000-5000	Home visits, record vital events and health related data
PHN	15,000-20,000	Nurse run clinics and home visits
REGISTRAR	20,000-30,000	Doctor run clinic

In addition to providing health care the Community medicine department also maintains a Health information system storing population details, disease related

information and vital events of the block population. Information on vital events and morbidities is collected by PTCHWs, confirmed and recorded by the health aides. The information is then verified by data managers and entered in the electronic health information system.

4.2 STUDY DESIGN

The study design is cross -sectional study. This was conducted in two phases. Phase one aimed to estimate the prevalence of hazardous drinking in the study population. In the second phase the spouses of phase one study participants were enrolled as respondents, in order to study family functioning.

4.3 STUDY POPULATION

4.3.1 First phase

Inclusion criteria

The study population in the first stage were married men in the 25 to 60 age group who are permanent residents of Kaniyambadi block.

Exclusion criteria

Mentally challenged individuals

Hearing and/or speech impaired

4.3.2 Second phase

Inclusion criteria

Wives of the men interviewed in the first stage formed the study population for the second stage of the study.

Exclusion criteria

1. Persons with known mental illness,
2. Hearing and/or speech impaired.

4.4 SAMPLE SIZE

Phase I

Prevalence of hazardous drinking of 15 % was taken to calculate sample size. This is from on a previous study in the area (24).

n = 4pq/d2

= 4*15*85/32

= 566

multiplying by 1.2 for design effect

566 * 1.2 = 680

adding 10% for nonresponse and rounding off, **n=750**

Phase II

• A Previous study showed that around 65 % of wives of alcoholics reported low quality of life compared to 35 % of wives of men who were either abstainers or social drinkers. (117)

$$n = \left(\frac{r+1}{r}\right)\frac{(\bar{p})(1-\bar{p})(Z_{\beta}+Z_{\alpha/2})^2}{(p_1-p_2)^2}$$

N = $\frac{2 * 50 * 50 * 7.84}{30^2}$

= 43 Rounding off **n= 50** in each group.

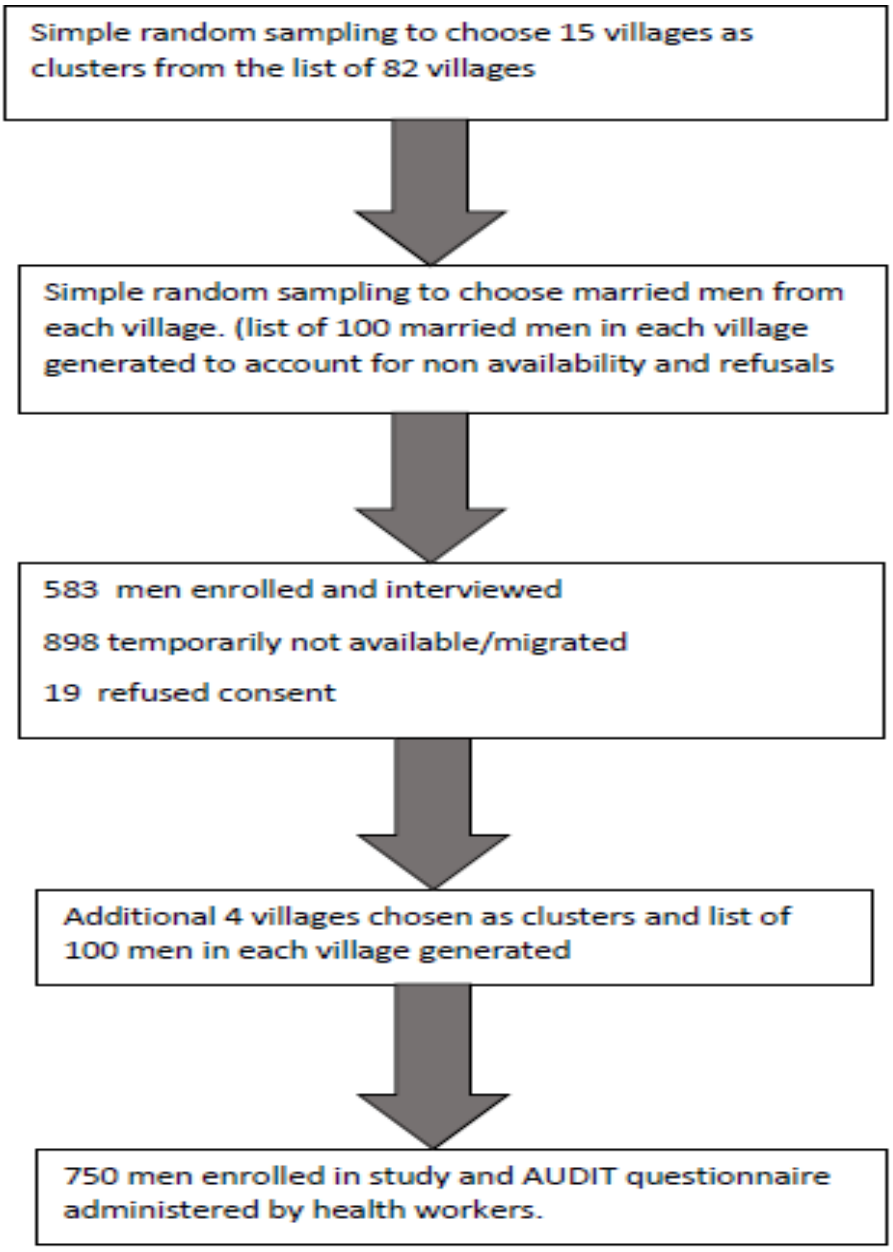
4.5 SAMPLING METHOD

4.5.1 First phase

Cluster sampling was used to select the initial respondents from the Community Medicine Health information system population database using simple random sampling.

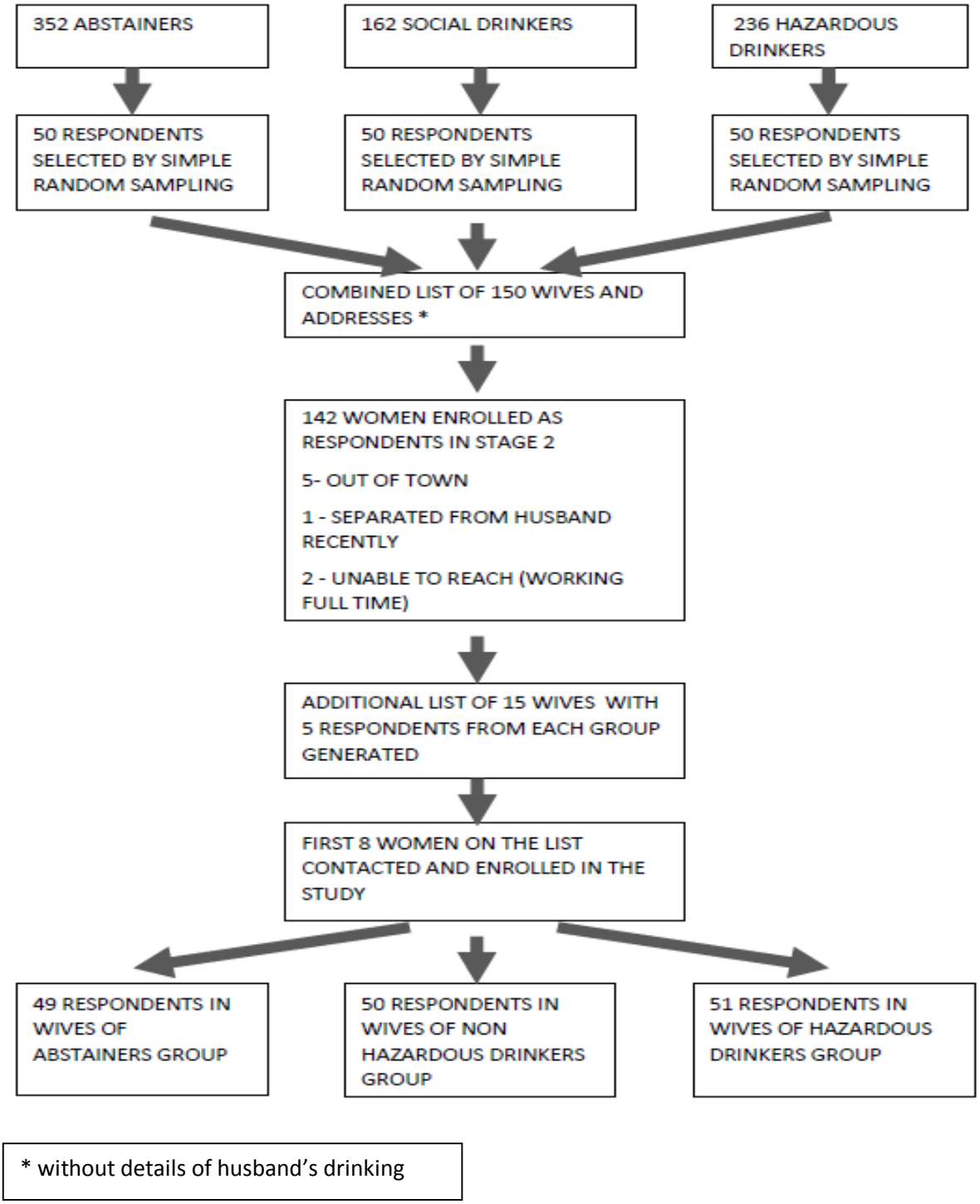
The following figure shows the sampling method for phase 1 of the study.

Figure 4-1: Flowchart for Phase 1 sampling method



4.5.2 Second phase

Figure 4-2: Flowchart for Phase 2 sampling method.



The respondents from stage 1 were classified on the basis of their AUDIT scores as Abstainers (AUDIT Score 0), non- hazardous / social drinkers (AUDIT Score <8),

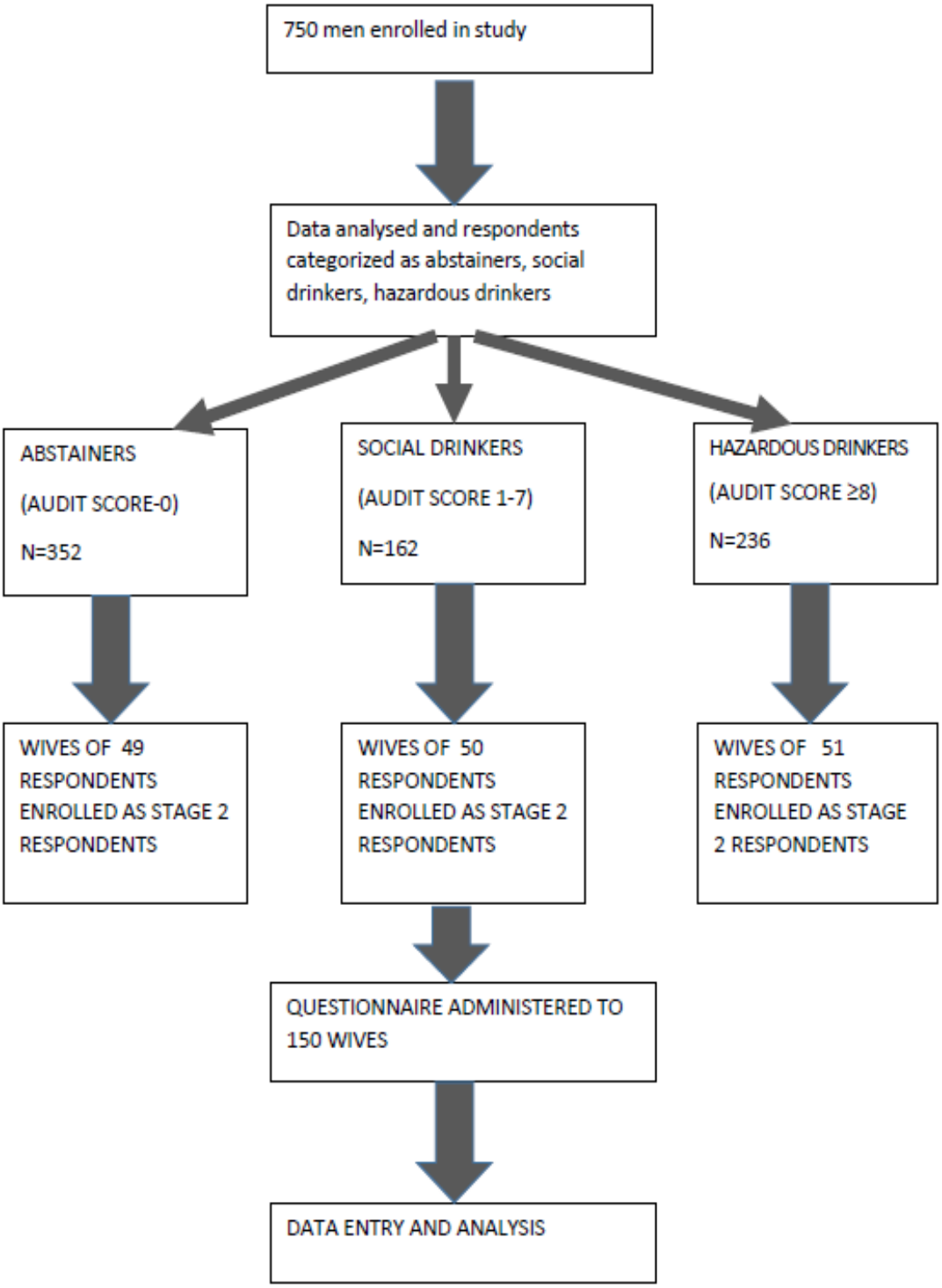
and hazardous drinkers (AUDIT >/=8). A sample of 150 was selected by simple random sampling method with equal distribution among the three groups and the wives of the selected men were contacted and enrolled

4.6 STUDY PROCEDURE

750 married men were enrolled in phase 1 of the study using cluster sampling method. The AUDIT questionnaire was administered by trained field workers and Demographic details and marital status were recorded. The information was then entered in Epidata and analyzed using SPSS. Based on the AUDIT questionnaire the respondents were classified as Abstainers, Social drinkers and Hazardous alcohol drinkers.

The wives of 150 men were contacted by the primary investigator and enrolled in the phase 2 of the study. This list had an equal distribution of respondents among the three above mentioned groups. A questionnaire which included demographic and marital details along with validated questionnaires for assessing perception of family functioning, quality of life, presence of domestic violence and presence of Common Mental health disorders were administered by the primary investigator.

Figure 4-3: Flowchart of study procedure.



4.7 ETHICS

The study was approved by the institutional review board and ethics committee of Christian Medical College, Vellore.

All participants who requested treatment for alcohol dependence were offered treatment in Mental Health Centre, CMC. Respondents who had physical health problems related to alcohol consumption were referred to CHAD hospital for treatment.

In the second phase of the study, women who were screen positive for presence of common mental health disorders were given referral to CHAD hospital for further management. Though provision was made for counselling of women who requested help or treatment for diseases or distress due their husbands' drinking, none availed of this facility.

4.8 TOOLS

4.8.1 Phase 1

1. A questionnaire regarding demographic details.
2. Alcohol Use Disorders Identification Test questionnaire to assess alcohol consumption pattern of the respondents. A score of 8 or above was considered as hazardous drinking behavior (66).

4.8.2 Phase 2

3. A questionnaire regarding the demographic details and marital details.
4. Family APGAR questionnaire - to determine perception of family functioning
5. The WHOQOL- BREF to determine quality of life
6. The HITS questionnaire to screen for the presence of domestic violence
7. The GHQ 12 questionnaire to screen for the presence of common mental health disorders.

4.9 BIAS

- In order to avoid interviewer bias during data collection, the drinking behavior of the husband was not revealed to the principle investigator and data collection during the first phase of the study was done by field workers.
- Selection bias was avoided by using a simple random sampling method to choose respondents for the second phase of study.
- Random misclassification of drinking behavior was avoided by using the validated AUDIT questionnaire.
- Reduction of non-response bias was done with the help of existing field workers, like health aides and PTCHWs, and also with rapport building and a comprehensive information sheet

5 RESULTS

5.1 QUANTITATIVE ANALYSIS

5.1.1 Phase 1

In the first phase of the study the AUDIT questionnaire was administered to 750 married men in the age group 25- 60 years from 19 villages. The socio demographic characteristics of the population are described below.

Table 5-1: Baseline Characteristics

Variable		No.	Percentage
Age (mean = 39.5 SD = 6.598)	25-29	68	9.1
	30-34	126	16.8
	35-39	158	21.1
	40-44	173	23.1
	45-49	168	22.4
	50-54	56	7.5
	55-59	1	0.1
Education	Nil	20	2.7
	Primary	50	6.7
	Middle	205	27.3
	High school	281	37.5
	Higher secondary/diploma	130	17.3
	Graduate or above	64	8.5
Occupation	Unemployed	12	1.6
	Unskilled workers	202	26.9
	Semi-skilled	72	9.6
	Skilled	193	25.7
	Clerk, farmer, shop	198	26.4
	Semiprofessional	72	9.6
	Professional	2	0.3

The majority of the respondents are between 36-50 years of age with a mean of 39.5 (S.D 6.598) years. There are fewer respondents in the less than 30 years and above

50 years' age groups. Around 63.3 % of the study population had studied at least up to high school while 2.7 % did not receive any formal education. Out of the 750 respondents 64 (8.5%) were graduates or had a higher educational qualification. 12 of the study participants were currently unemployed. The most common occupation category was unskilled work amounting to 26.9%. Among the unskilled workers 73.2% were involved in non-agricultural work as shown in the table below.

Table 5-2: Categories of unskilled work.

	No.	%
Agricultural labour	74	36.8
Non-agricultural daily wage work	128	73.2

Table 5-3: Marital status of study population.

	No.	Percentage
Currently married	744	99.2
Separated	4	0.5
Widowed	2	0.3

Among the 750 married men in the study, 4 (0.5%) were currently separated from their wives as shown in the table above. However, this is likely to be an underestimate since remarriages were not reported.

Prevalence of harmful alcohol use

The prevalence of problem drinking was estimated based on the AUDIT questionnaire

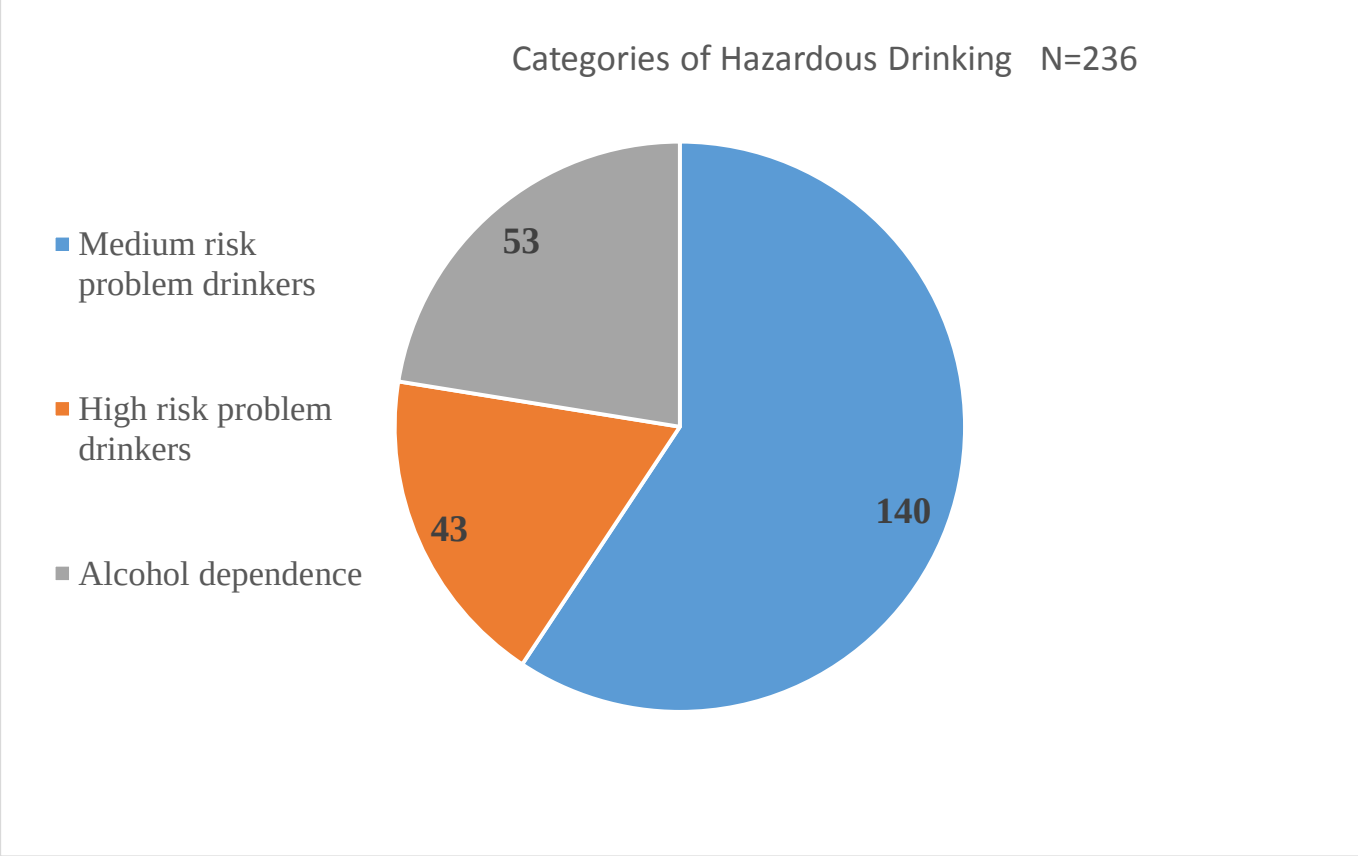
Men with an AUDIT score of ≥ 8 were considered to be problem or hazardous drinkers. Among problem drinkers AUDIT scores in the range of 8-15 represent a medium level of alcohol related problems whereas scores of 16 and above represented a high level of alcohol problems and AUDIT scores of 20 or above suggest alcohol dependence

Table 5-4:Prevalence of Hazardous Drinking.

Category	**No.**	**Percentage**	**95% CI**
Abstainers (AUDIT SCORE 0)	352	46.9	43.25 - 50.54
Social drinkers (AUDIT SCORE 1-7)	162	21.6	18.59 - 24.61
Hazardous drinkers (AUDIT SCORE ≥ 8)	236	31.5	28.11 - 34.89

Around 46.9% of the respondents said they abstain from alcohol. Currently 53.1 % of the married men consume alcohol of which more than half (59.2%) were hazardous drinkers. Among the 236 respondent who were classified as hazardous drinkers 53 (22.5%) fall into the category of alcohol dependence.

Figure 5-1: Classification of Hazardous drinkers.



The severity of hazardous drinking based on AUDIT scores is shown in the graph above. Around 23% of men with hazardous pattern of alcohol consumption were found to have alcohol dependence and 18% were high risk problem drinkers.

Hazardous drinking behavior across age categories

Drinking behavior was found to be similar across all age categories as shown in the table below.

Table 5-5: Drinking patterns across age categories.

Age category in years	Abstainers	Social drinkers	Hazardous drinkers	P value (chi-square test)
25-34 years	96(49.5%)	40(20.6%)	58(29.9%)	0.887
35-44 years	152(45.9%)	70(21.1%)	109(32.9%)	
≥ 45 years	104(46.2%)	52(23.1%)	69(30.7%)	

5.1.2 Phase 2

50 women, wives of men from each of the three groups of alcohol drinking pattern were randomly selected as respondents for the second part of the study. The sociodemographic description of this sample population is as follows.

Table 5-6: Sociodemographic characteristics of phase 2 respondents

S.No.	Variable		No.	Percentage
1	Age category in years (Mean-31.83, SD-6.99)	20-29	62	41.3
		30-39	60	40
		40-49	28	18.7
2	Education	Nil	10	6.7
		Primary	6	4.0
		Middle	48	32.0
		High	54	36.0
		Higher secondary	22	14.7
		Graduate	10	6.7

3	Whether working	Housewife	81	54.0
		Working	69	46.0
4	Occupation (n=69)	Unskilled	54	78.3
		Skilled	5	7.2
		Clerk, farmer, shopkeeper	5	7.2
		Semi professional	5	7.2
5	Type of house	≥5 room	11	7.3
		3-4 rooms	58	38.7
		1-2 rooms	59	39.3
		Tiled house	17	11.3
		Hut	5	3.3
6	Socioeconomic status Modified Kuppusamy scale 2015	Upper middle	25	16.7
		Lower middle	65	43.3
		Upper lower	60	40.0
7	Self-help group member	Yes	61	40.7
		No	89	59.3
8	Self-help group leader (N=61)	Yes	5	8.2
		No	56	91.8

The mean age of the respondents was 31.8 with a range from 20 to 47 years. The respondents' age reflects the ages of participants in phase 1 of the study and smaller number in age groups 40 and above is reflection of the fewer male participants in age groups 50 years and above. 6.7 % of the respondents had no formal education. However more than half the respondents (57.4%) had a high school education or higher. 46 % of the respondents were working women. However out of the 69 working women the majority (78.3%) were involved in unskilled work. Among the study population only 5 lived in thatched huts. Among the 128 respondents living in terraced houses, more than half lived in houses with 3 or more rooms. 60% of the study population belonged to the upper middle and lower middle socioeconomic class. The remaining 40% of respondents belonged to the upper lower class. There were no study respondents belonging to the lower or upper socioeconomic classes.

The above table shows that 40% of women in the study were members of self-help groups. Of these 8% were held leadership posts in their Self-help group.

Family and Marital details

Half the respondents (n=75) belonged to nuclear families and the mean household size was 4. Around half of the respondents had been married for more than 10 years and 24 respondents had 3 or more children. More than three fourth of the respondents had 1 -2 children and the household size was four or less in 52% of the respondents. Arranged marriage was the norm, with 90% of the study women having had arranged marriages. Almost one third of all marriages were consanguineous marriages. Among the women who had consanguineous marriage, three fourth were married to their first cousins.

Table 5-7: Family and Marital details.

VARIABLE		NO.	Percentage
Type of family	Joint	11	7.3
	Extended	64	42.7
	Nuclear	75	50
Married for(yrs.) (Mean 12.39 Median 11)	Less than or equal to 10 yrs.	71	47.3
	More than 10 yrs.	79	52.7
Type of marriage	Love marriage	15	10
	Arranged	135	90
Consanguinity	Yes	44	29.3
	No	106	70.7
If consanguineous (n=44)	Uncle	11	25
	Cousin	33	75
No of children	No children	7	4.7
	1-2 Children	119	79.3
	≥ 3 Children	24	16
House hold size	1-4	78	52
	5-9	69	46
	≥10	3	2

Comparison of baseline variables among different spousal drinking pattern

Table 5-8: Comparison of Baseline variables.

Variable		Abstainers N=49	Social drinkers N=50	Hazardous drinkers N=51	P value (chi-square test)
Age category in years	20-29	18(36.7%)	21(42%)	23(45.1%)	0.255
	30-39	21(42.9%)	16(32%)	23(45.1%)	
	40-49	10(20.4%)	13(26%)	5(9.8%)	
Type of family	Joint	1(2%)	7(14%)	3(5.9%)	0.188
	Extended	23(46.9%)	21(42%)	20(39.2%)	
	Nuclear	25(51.1%)	22(44%)	28(54.9%)	
Husbands education	Nil	0	1(2%)	4(7.8%)	0.033
	Primary	3(6.1%)	1(2%)	1(2%)	
	Middle	11(22.4%)	10(20%)	20(39.2%)	
	High school	20(40.8%)	25(50%)	18(35.3%)	
	Higher secondary	8(16.8%)	11(22%)	7(13.7%)	
	Graduate or above	7(14.3%)	2(4%)	1(2%)	
Husbands occupation	Unemployed	1(2%)	0	0	0.106
	Unskilled workers	8(16.3%)	12(24%)	19(37.3%)	
	Semi-skilled	3(6.1%)	8(16%)	3(5.9%)	
	Skilled	15(30.6%)	14(28%)	18(35.3%)	
	Clerk, farmer, shop	19(38.8%)	12(24%)	8(15.7%)	
	Semiprofessional	2(4.1%)	4(8%)	3(5.9%)	
	Professional	1(2%)	0	0	

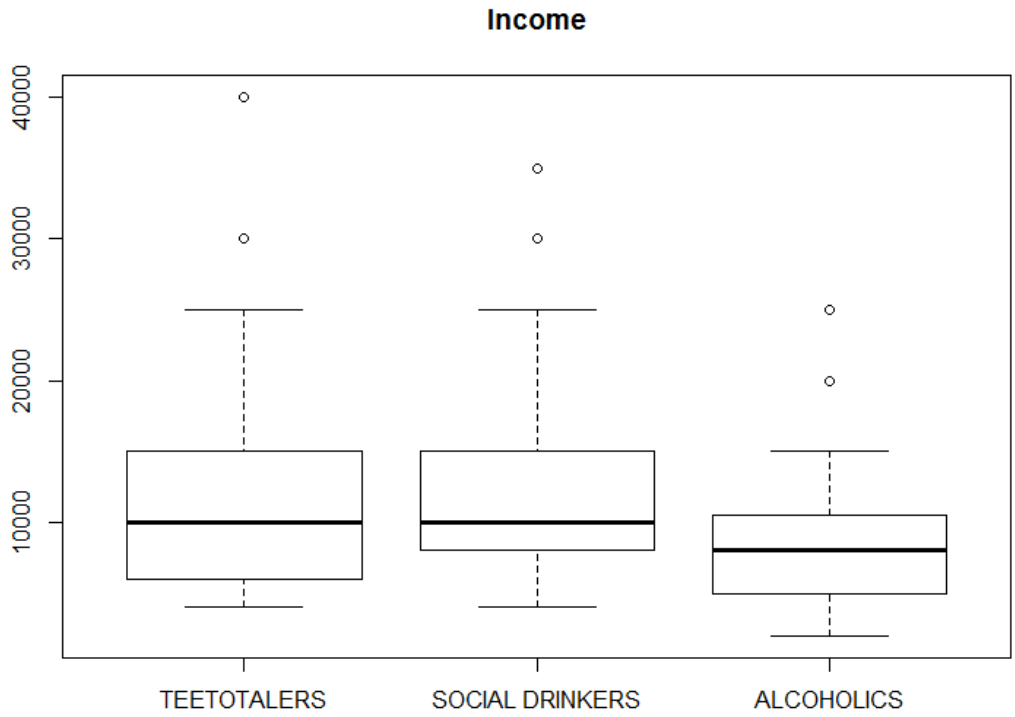
Respondents education	Nil	3(6.1%)	5(10%)	2(3.9%)	0.689
	Primary	3(6.1%)	2(4%)	1(2%)	
	Middle	18(36.7%)	13(26%)	17(33.3%)	
	High school	15(30.6%)	21(42%)	18(35.3%)	
	Higher secondary/diploma	5(10.2%)	7(14%)	10(19.6%)	
	Graduate or above	5(10.2%)	2(4%)	3(5.9%)	
Family income	Mean	12367	12410	9010	0.024
Socioeconomic status	Upper middle	12(24.5%)	11(22%)	2(3.9%)	0.001
	Lower middle	26(53.1%)	21(42%)	18(35.3%)	
	Upper lower	11(22.4%)	18(36%)	31(60.8%)	
Loan in family	Yes	42(85.7%)	35(70%)	36(70.6%)	0.121
	No	7(14.3%)	15(30%)	15(29.4%)	
Working/not	Working	20(40.8%)	29(58%)	20(39.2%)	0.112
	Housewife	29(59.2%)	21(42%)	31(60.8%)	
Self-help group member	No	29(59.2%)	32(64%)	28(54.9%)	0.648
	Yes	20(40.8%)	18(36%)	23(45.1%)	
Married for years	</=10 years	22(44.9%)	24(48%)	25(49%)	0.912
	>10 years	27(55.1%)	26(52%)	26(51%)	
Type of marriage	Arranged marriage	45(91.8%)	46(92%)	44(86.3%)	0.551
	Love marriage	4(8.2%)	4(8%)	7(13.7%)	
Consanguinity	Yes	12(24.5%)	16(32%)	16(31.4%)	0.661
	No	37(75.5%)	34(68%)	35(68.6%)	

The above table compares the baseline variables among the different drinking patterns. Hazardous drinking was present in all occupational categories. However, the number of hazardous drinkers was more among unskilled workers, and the number of abstainers were more among clerical and agricultural land owners. Type of marriage, duration of marriage and membership in self-help groups was similar in all patterns of drinking.

The husband's education in the abstainers and non-hazardous drinkers' groups were similar with 71.4% and 76 % respectively having a high school or higher education, compared to 51% in the hazardous drinkers group. The proportion of working women was similar across all categories of drinking pattern.

There was a statistically significant difference in the socioeconomic status, income and husband's education among the three drinking patterns. While in both the abstainers and non-hazardous drinkers' groups around half the respondents belonged to the lower middle socioeconomic class, more than half (60.8%) of the respondents in the hazardous drinkers group belonged to the upper lower socioeconomic group. Additionally, families in the hazardous drinking group had a lower mean monthly income than the other two groups, as shown in the figure below.

Figure 5-2: Comparison of income among the three drinking pattern groups.



Effects of pattern of drinking on family functioning

Family functioning in this study is considered by the following components

a) Perception of family support by the spouse (Family APGAR),

b) Presence of domestic violence (HITS questionnaire)

c) Quality of Life (WHO-QOL BREF)

d) Presence of mental health problems(GHQ-12)

e) Presence of school dropouts among children

A) **Perception of Family Support by the Spouse (Family APGAR),**

The family APGAR questionnaire has five questions, with a possible score of 0-2 for each question. The standard cutoff for good family functioning is a score of 7 or above.

The prevalence of dysfunction based on the spouses' perception was 49% in the hazardous drinkers group compared to 32.7% and 36% respectively in the abstainers and non-hazardous drinkers group

Table 5-9:Pattern of alcohol drinking and spouse's perception of family functioning.

	Family dysfunction (Family APGAR score <7)	Good functioning (Family Apgar score ≥ 7)	P value (chi-square test)
Abstainers	16(32.7%)	33(67.3%)	0.207
Non-hazardous drinkers	18(36%)	32(64%)	
Hazardous drinkers	25(49%)	26(51%)	

The table reveals that there was no statistically significant difference in the perception of family functioning among the spouses of men belonging to the three different drinking pattern groups.

B) **Presence of Domestic Violence (HITS questionnaire)**

The HITS questionnaire is a four item questionnaire and each item has a possible score of 1-5. A score of 10 or above is considered to be screen positive for domestic violence (118).

The prevalence of domestic violence in the hazardous drinkers group was 31.4%, which was significantly different from the abstainers and nonhazardous drinkers' groups. The prevalence of domestic violence in the abstainers group was 8.2% and the non-hazardous drinkers group was 10%.

Table 5-10:Pattern of alcohol drinking and domestic violence

	Presence of Domestic violence (HITS score >10)	Negative for domestic violence (HITS score <10)	P value (chi-square test)
Abstainers	4(8.2%)	45(91.8%)	0.002
Non-hazardous drinkers	5(10%)	45(90%)	
Hazardous drinkers	16(31.4%)	35(68.6%)	

C) **Quality of Life (WHO-QOL BREF)**

The WHO-QOL score is a 26 item questionnaire. There is no standard cut-off for a score more than the median value is considered good quality of life (119), (120).

The non-hazardous drinkers group had the lowest prevalence of low quality of life at 38%. Also 62% of the respondents in the hazardous drinkers group had a lower quality of life. The median quality of life score for the sample population was 64.6.

Table 5-11:Alcohol drinking pattern and spouse's quality of life.

	Low quality of life QOL≤median (64.6)	High quality of life QOL>median (64.6)	P value (Chi-square test)
Abstainers	23(46.9%)	26(53.1%)	0.042
Non-hazardous drinkers	19(38%)	31(62%)	
Hazardous drinkers	32(62.7%)	19(37.3%)	

There is a worsening of Quality of life with increase in drinking pattern. Hazardous drinkers group had the highest prevalence of low quality of life.

WHO-QOL BREF domains

The WHO- QOL BREF also gives scores in four domains namely: physical, psychological, social and environmental. The study shows a statistically significant difference among the three groups only in the environmental domain. The respondents in the non-hazardous drinkers group had the lowest prevalence of low quality in the environmental domain (32%). As shown in the following tables in all domains of quality of life, the hazardous drinkers group had the higher prevalence of low quality of life, but the difference among the groups was not statistically significant.

Table 5-12:Alcohol drinking pattern and physical domain of quality of life.

	Low quality of life QOL ≤ median (50)	High quality of life QOL>median (50)	P value (chi-square test)
Abstainers	29(59.2%)	20(40.8%)	0.069
Non-hazardous drinkers	23(46%)	27(54%)	
Hazardous drinkers	35(68.6%)	16(31.4%)	

Table 5-13:Alcohol drinking pattern and psychological domain of quality of life.

	Low quality of life QOL ≤ median (58)	High quality of life QOL>median (58)	P value (chi-square test)
Abstainers	22(44.9%)	27(55.1%)	0.248
Non-hazardous drinkers	22(44%)	28(56%)	
Hazardous drinkers	30(58.8%)	21(41.2%)	

Table 5-14:Alcohol drinking pattern and social domain of quality of life.

	Low quality of life QOL ≤ median (50)	High quality of life QOL>median (50)	P value (chi-square test)
Abstainers	30(61.2%)	19(38.8%)	0.667
Non-hazardous drinkers	28(56%)	22(44%)	
Hazardous drinkers	33(64.7%)	18(35.3%)	

Table 5-15:Alcohol drinking pattern and environmental domain of quality of life.

	Low quality of life QOL ≤ median (50)	High quality of life QOL>median (50)	P value (chi-square test)
Abstainers	20(40.8%)	29(59.2%)	0.038
Non-hazardous drinkers	16(32%)	34(68%)	
Hazardous drinkers	29(56.9%)	22(43.1%)	

D) **Presence of Mental Health Problems(GHQ-12)**

Among the 150 respondents five were screen positive for presence of common mental health disorders. A score of 3 and above was taken as screen positive for presence of common mental disorders (121).

Table 5-16:Pattern of alcohol drinking and presence of common mental health disorders in spouse.

	Presence of Common Mental Disorders	No Common Mental Disorders	P value (chi-square test)
Abstainers	2(4.1%)	47(95.9%)	0.801
Non-hazardous drinkers	1(2%)	49(98%)	
Hazardous drinkers	2(3.9%)	49(96.1%)	

There was no statistically significant difference in the prevalence among the three groups. However, this might be attributable to the small number of women who were screen positive for presence of common mental health disorders.

E) **School Drop-outs**

Among the 150 respondents, two had children who had dropped out of school before 8th standard. One respondent belonged to the nonhazardous drinkers group, while the other belonged to the hazardous drinkers group. When asked about the reason both women attributed their children dropping out of school to the children's academic failure.

Among all the different components of family functioning studied presence of domestic violence and quality of life of the respondents are found to be associated with the alcohol drinking pattern of the husbands.

Determinants of family functioning

Bivariate analysis was done to identify other factors that may influence family functioning. Factors included for analysis were personal, marital factors and the husband's drinking pattern. For this the respondents were classified into two categories on the basis on their husband's drinking pattern as the hazardous drinkers group and the non-hazardous / nondrinkers group. Of the total 150 respondents, 51 belonged to the hazardous drinkers group and 99 were in the nonhazardous/ nondrinkers group.

The other factors included for analysis were socioeconomic status, age of the respondent, education of the respondent and spouse, type of family and marriage, duration of marriage, whether the respondent is working, self-help group membership and presence of loan.

Relationship between social factors and wives' perception of family functioning as measured by family APGAR.

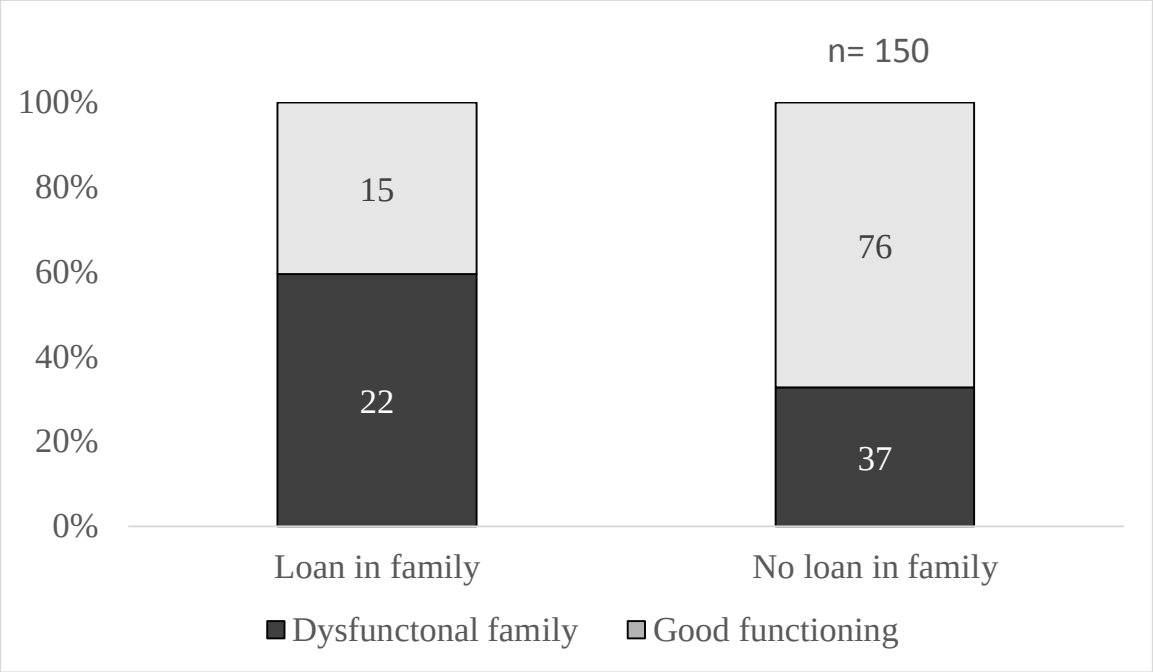
The following table shows the associations between perception of family functioning by the respondent and its association with the husband's drinking pattern and other social factors. Hazardous drinking was not associated statistically with the perception of family functioning by the spouse. Other sociodemographic factors like age of the respondent, education of the couple, type of family, and marriage did not influence the perception of family functioning. Only the presence of loan in the family was a significant risk factor.

Table 5-17:Determinants of perception of family functioning.

		Family dysfunction (Family APGAR<7)	Good family functioning (Family APGAR≥7)	P value (chi-square test)	Odd's ratio (95% confidence interval)
Alcohol Consumption	Hazardous	25(49%)	26(51%)	0.081	1.83 (0.92-3.65)
	Nonhazardous/ Non drinkers	34(34.3%)	65(65.7%)		
Socioeconomic status	Lower	29(48.3%)	31(51.7%)	0.065	1.871 (0.95-3.65
	Middle	30(33.3%)	60(66.7%)		
Age	</=32yrs	28(34.1%)	54(65.9%)	0.153	0.62 (0.32-1.19)
	>32 yrs.	31(45.6%)	37(54.4%)		
Respondents Education	Middle school and less	26(40.6%)	38(59.4%)	0.78	1.09 (0.57-2.13)
	High school and above	33(38.4%)	53(61.6%)		
Husband's education	Middle school and less	20(39.2%)	31(60.8%)	0.983	0.990 (0.49-1.98)
	High school and above	39(39.4%)	60(60.6%)		
Type of family	Non-nuclear	25(33.3%)	50(66.7%)	0.132	0.60 (0.31-1.16)
	Nuclear	34(45.3%)	41(54.7%)		
Married years	</=10	22(31%)	49(69%)	0.47	0.51 (0.26-0.99)
	>10	37(46.8%)	42(53.2%)		
Type of marriage	Arranged	56(41.5%)	79(58.5%)	0.10	2.84 (0.765-10.5)
	Love	3(20%)	12(80%)		
Self-help group member	No	36(40.4%)	53(59.6%)	0.735	1.12 (0.58-2.19
	Yes	23(37.7%)	38(62.3%)		
Working	Housewife	29(35.8%)	52(64.2%)	0.337	0.73 (0.38-1.40)
	Working	30(43.5%)	39(56.5%)		
Loan in family	Yes	22(59.5%)	15(40.5%)	0.004*	3.01 (1.40-6.47)
	No	37(32.7%)	76(67.3%)		

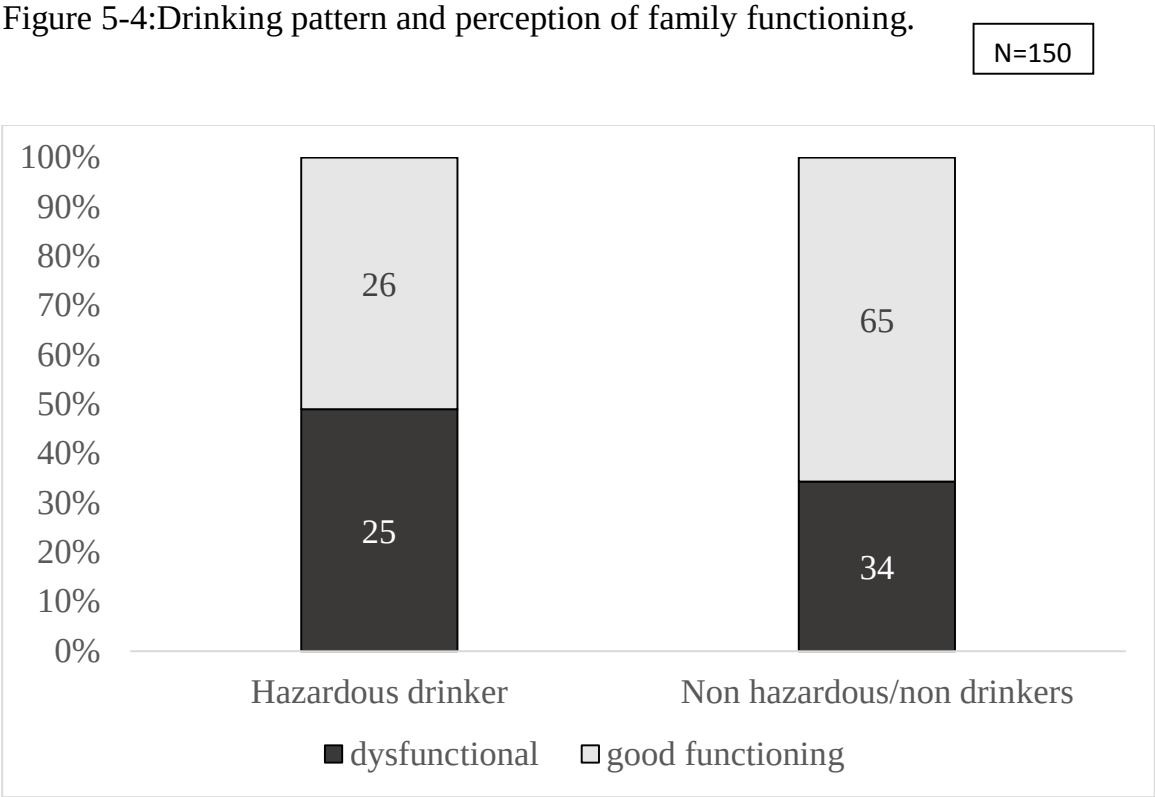
The above table shows the bivariate analysis of baseline variables, hazardous drinking etc. with perception of family dysfunction Among the various factors considered only the presence of loan in the family was associated with the perception of family functioning by the wife. The proportion of dysfunction was 59.5% among those with presence of loan in the family, compared to 32.7% among those with no loan.

Figure 5-3:Loan in the family and perception of family functioning.



The prevalence of family dysfunction was higher among hazardous drinkers as shown in the figure below. The prevalence of dysfunction was 49% in the hazardous drinkers group, compared to 34% in the non-hazardous/ non-drinkers group. However, this difference was not statistically significant.

Figure 5-4:Drinking pattern and perception of family functioning.



Relationship between social factors and domestic violence

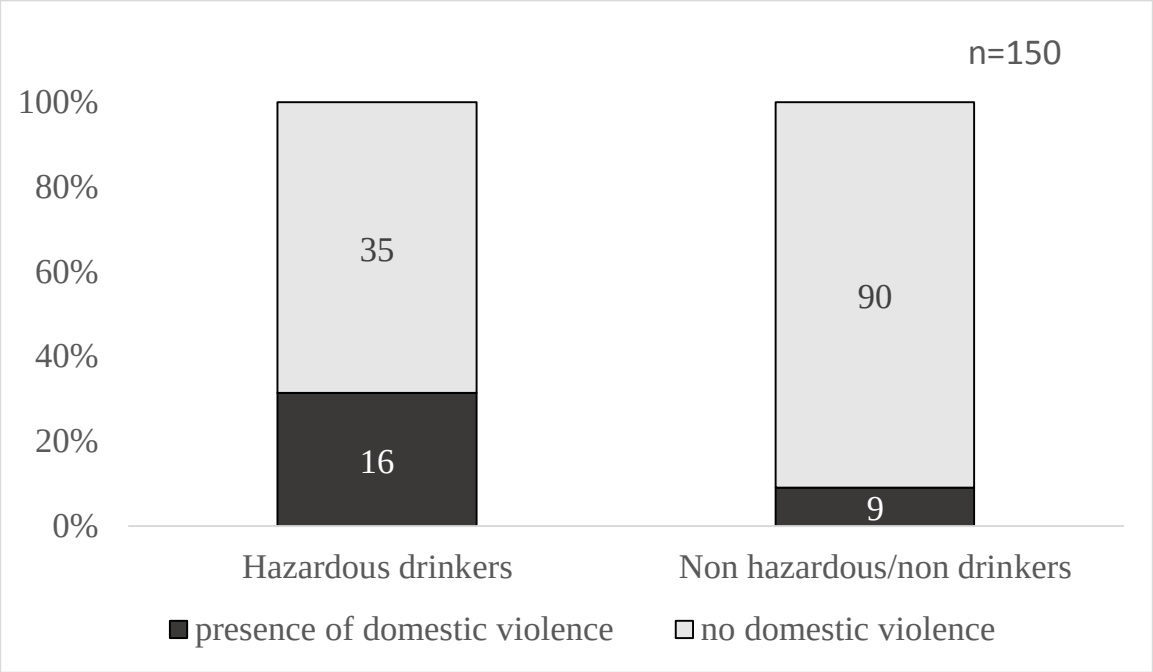
The following table explains the association between alcohol consumption and various social factors. Hazardous drinking, lower socioeconomic status, type of family and presence of loan in the family were factors significantly associated with presence of domestic violence. Education, occupation category, type and duration of marriage and membership in self-help groups were not linked to presence of domestic violence.

Table 5-18 Determinants of domestic violence.

		Presence of domestic violence	No domestic violence	p value (Chi-square test)	OR (95% confidence interval)
Alcohol Consumption	Hazardous	16(31.4%)	35(68.6%)	0.001*	4.57 (1.85-11.30)
	Nonhazardous/ Non drinkers	9(9.1%)	90(90.9%)		
SES	Lower	16(26.7%)	44(73.3%)	0.007*	3.27 (1.35-8.01)
	Middle	9(9.1%)	90(90.9%)		
Age	</=32yrs	12(14.6%)	70(85.4%)	0.460	0.73 (0.31-1.72)
	>32 yrs.	13(19.1%)	55(80.9%)		
Respondent's Education	Middle school and less	13(20.3%)	51(79.7%)	0.301	1.57 (0.66-3.72)
	High school and above	12(14%)	74(86%)		
Husband's education	Middle school and less	10(19.6%)	41(80.4%)	0.488	1.37 (0.57-3.30)
	High school and above	15(15.2%)	84(84.8%)		
Type of family	Non-nuclear	7(9.3%)	68(90.7%)	0.016*	0.33 (0.13-0.84)
	Nuclear	18(24%)	57(76%)		
Married years	</=10	10(14.1%)	61(85.9%)	0.481	0.69 (0.29-1.68)
	>10	15(19%)	64(81%)		
TYPE OF MARRIAGE	ARRANGED	24(17.8%)	111(82.2%)	0.27	3.027 (0.30-24.13)
	LOVE	1(6.7%)	14(93.3%)		
SELF-HELP GROUP MEMBER	NO	14(15.7%)	75(84.3%)	0.71	0.85 (0.36-2.08)
	YES	11(18%)	50(82%)		
WORKING	HOUSEWIFE	11(13.6%)	70(64.9%)	0.272	0.62 (0.26-1.47)
	WORKING	14(20.3%)	55(79.7%)		
Loan	Yes	13(35.1%)	24(64.9%)	0.001*	4.56(1.85-11.24
	No	12(10.6%)	101(89.4%)		

Among the 25 respondents who screened positive for domestic violence, more than half (64%) were in the hazardous drinkers group.

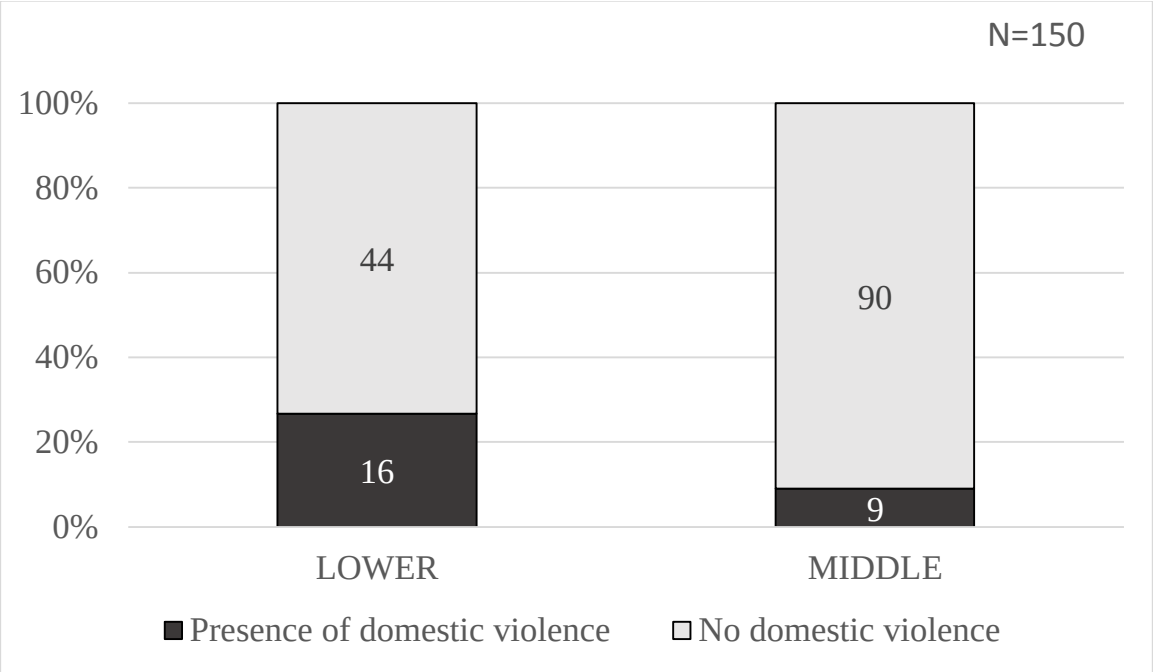
Figure 5-5: Drinking pattern and domestic violence



In addition, the husband's drinking pattern, other factors like socioeconomic status, type of family and presence of loan in the family were significantly associated with presence of domestic violence.

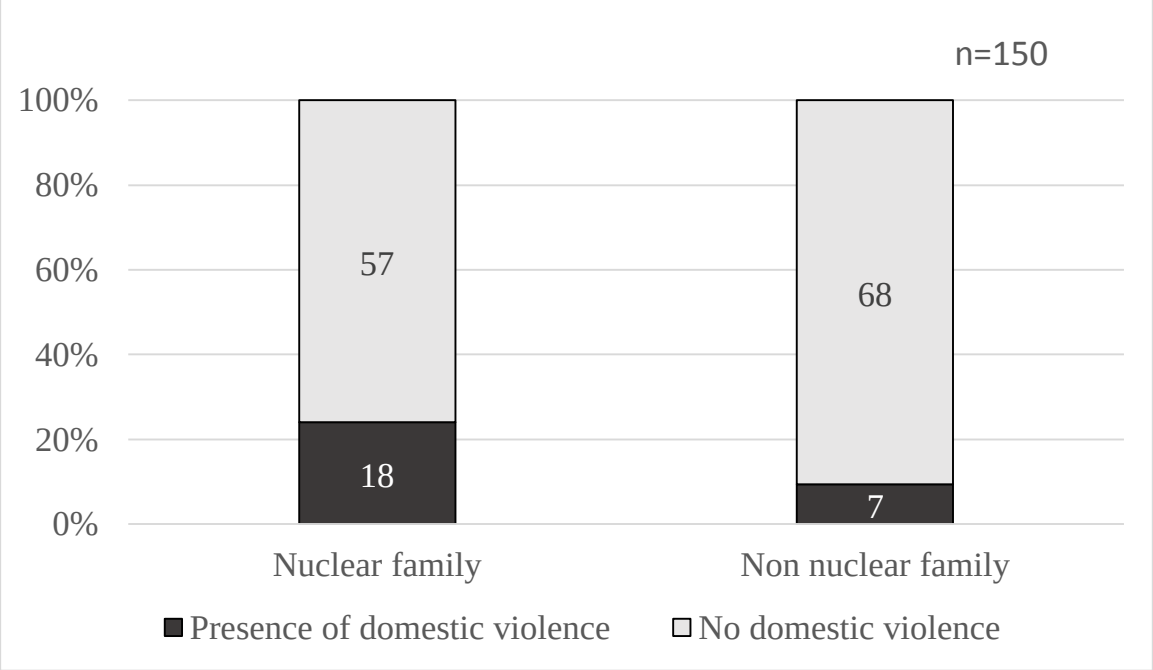
Women in lower socioeconomic class according to Kuppusamy scale were 2.05 times more likely to experience domestic violence, compared to women in middle socioeconomic class.

Figure 5-6: Socioeconomic status and domestic violence.



There was higher prevalence of domestic violence in nuclear families, but there was no statistically significant association.

Figure 5-7: Type of family and domestic violence.



Relationship between social factors and Quality of life.

Table 5-19: Determinants of Quality of Life.

		Poor QOL (QOL≤ Median (64))	Good QOL (QOL>Median (64))	P value (chi-square test)	Odds Ratio (95% confidence interval)
Alcohol Consumption	Hazardous	32(62.7%)	19(37.3%)	0.025*	2.29 (1.14-4.57)
	Nonhazardous/ Non drinkers	42(42.2%)	57(57.6%)		
Socio-economic status	Lower	36(60%)	24(40%)	0.033*	2.05 (1.06- 3.99)
	Middle	38(42.2%)	52(57.8%)		
Age	</=32yrs	36(43.9%)	46(56.1%)	0.144	0.62 (0.32- 1.18)
	>32 yrs.	38(55.9%)	30(44.1%)		
Respondents Education	Middle school and less	32(50%)	32(50%)	0.888	1.05 (0.55-2.01)
	High school and above	42(48.8%)	44(51.2%)		
Husband's education	Middle school and less	30(58.8%)	21(41.2%)	0.095	1.79 (0.90- 3.54)
	High school and above	44(44.4%)	55(55.6%)		
Type of family	Nuclear	40(53.3%)	35(46.7%)	0.327	1.38 (0.73- 2.62)
	Non-nuclear	34(45.3%)	41(54.7%)		
Married years	</=10	30(42.3%)	41(57.7%)	0.100	0.58 (0.31-1.11)
	>10	44(55.7%)	35(44.3%)		
Type of marriage	Arranged	67(49.6%)	68(50.4%)	0.831	1.13 (0.39- 3.28)
	Love	7(46.7%)	8(53.3%)		
Self-help group member	No	46(51.7%)	43(48.3%)	0.486	1.26 (0.66- 2.42)
	Yes	28(47.5%)	33(52.5%)		
Working	Housewife	36(44.4%)	45(55.6%)	0.194	0.65 (0.34-1.25)
	Working	38(55.1%)	31(44.9%)		
Loan in family	Yes	26(70.3%)	11(29.7%)	0.003*	3.20 (1.44- 7.10)
	No	48(42.5%)	65(57.5%)		

Bivariate analysis between various social factors and alcohol consumption with quality of life is shown in the table above. Alcohol consumption was found to be associated to quality of life, with an Odd's ratio of 2.29. The other factors associated with quality of life were loan in the family and socioeconomic status.

Relationship between domestic violence and other outcome variables.

An analyses of the relationship between the outcome variables was done and is shown in the table below.

Women who experienced domestic violence were more likely to have perceived family dysfunction. The risk of dysfunction was 6.73 times higher in women who were screen positive for domestic violence.

Table 5-20:Domestic violence and family functioning.

	Family dysfunction (Family APGAR<7)	Good family functioning (Family APGAR≥7)	P value (chi-square test)	Odds Ratio (95% confidence interval)
Presence of domestic violence	19(76%)	6(24%)	0.001	6.73 (2.50-18.14)
No domestic violence	40(32%)	85(68%)		

Table 5-21:Domestic violence and Quality of Life.

	Quality of life ≤Median	Quality of life >Median	P value	Odds Ratio
Presence of domestic violence	23(92%)	2(8%)	0.0001	16.69 (3.77-73.91)
No domestic violence	57(40.8%)	74(59.2%)		

As shown in the table above there was a higher prevalence of low quality of life in women who experienced domestic violence. The risk of low quality of life in women who experienced domestic violence was 16.69 times higher than in women who did not experience domestic violence.

Multivariate model

Multivariate analysis was done to estimate the independent effect of hazardous drinking on the measures of family functioning viz. perception of family functioning, presence of domestic violence and quality of life

Table 5-22:Logistic regression model for factors associated with perception of family functioning.

s.no.	Variables	B-coefficient	Sig	Adjusted Odds ratio	95%Confidence interval for odds ratio	
					Lower	Upper
1.	Hazardous drinking	.389	.368	1.476	.632	3.445
2.	Age	-.022	.967	.978	.339	2.824
3.	Respondent's education	-.305	.462	.737	.326	1.664
4.	Housewife or working	-.170	.672	.843	.384	1.854
5.	Husband's education	-.677	.166	.508	.195	1.326
6.	Socioeconomic status	.484	.322	1.622	.623	4.221
7.	Type of marriage	.901	.234	2.463	.558	10.870
8.	Duration of marriage	-.808	.140	.446	.153	1.303
9.	Type of family	-.264	.507	.768	.352	1.676
10.	Presence of loan	.896	.051	2.449	.997	6.015
11.	Presence of common mental disorders	1.889	.156	6.616	.485	90.218
12.	Presence of domestic violence	1.319	.020*	3.741	1.231	11.374

Domestic violence was the significant risk factor for family dysfunction as measured by family APGAR.

Binary logistic regression was done for various factors against presence of domestic violence.

Table 5-23: Logistic regression model for factors associated with domestic violence

s.no.	Variables	B-coefficient	Sig	Adjusted Odds ratio	95%Confidence interval for odds ratio	
					Lower	Upper
1.	Age	.045	.952	1.046	.238	4.594
2.	Perception of family functioning	1.300	.024*	3.671	1.183	11.388
3.	Presence of loan	1.163	.046*	3.201	1.020	10.048
4.	Whether working	-.489	.400	.613	.197	1.913
5.	Presence of common mental disorders	.288	.830	1.334	.096	18.621
6.	Duration of marriage	-.140	.849	.870	.207	3.649
7.	Type of family	-.927	.108	.396	.128	1.227
8.	Husband's education	-.602	.365	.548	.149	2.014
9.	Type of marriage	1.035	.358	2.816	.310	25.611
10.	Hazardous drinking	1.466	.010*	4.333	1.428	13.146
11.	Socioeconomic status	.507	.441	1.660	.457	6.032
12	Respondents education	.368	.528	1.444	.461	4.520

Husband's hazardous drinking behavior and presence of debt in the family were the only significant risk factor for domestic violence as shown in the table above.

Table 5-24:Logistic regression model for factors associated with quality of life.

s.no.	Variables	B-coefficient	Sig	Adjusted Odds ratio	95%Confidence interval for odds ratio	
					Lower	Upper
1.	Hazardous drinking	.454	.298	1.575	.669	3.705
2.	Respondent's age	-.299	.581	.741	.256	2.144
3.	Respondent's education	-.536	.201	.585	.258	1.330
4.	Housewife or working	-.371	.350	.690	.317	1.503
5.	Husband's education	.448	.331	1.565	.634	3.860
6.	Socioeconomic status	.025	.958	1.026	.404	2.601
7.	Type of marriage	-.264	.669	.768	.229	2.575
8.	Duration of marriage	-.607	.267	.545	.186	1.592
9.	Type of family	.019	.961	1.019	.472	2.199
10.	Presence of loan	.977	.039*	2.656	1.048	6.728
11.	Domestic violence	2.532	.001*	12.573	2.647	59.720

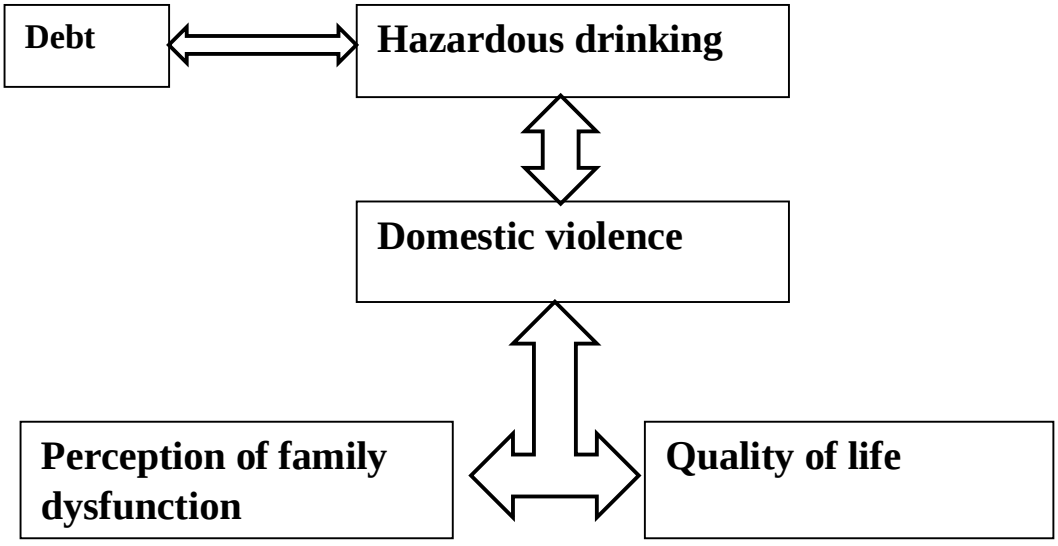
Multivariate analysis was done to determine independent risk factors of low quality of life.

Domestic violence and presence of loan in the family were the only variable significantly associated with poor quality of life.

The multivariate analysis of various factors with family functioning revealed significant association with domestic violence. The logistic regression analysis between domestic violence and various factors revealed the association of hazardous drinking and presence of family loan with domestic violence. No other factor was found to be significantly linked to hazardous drink.

Conceptually the findings of the study can be understood by the figure given below.

Figure 5-8:Relationship between Hazardous drinking and measures of Family Functioning



Therefore, while hazardous drinking behavior is directly linked to domestic violence, both spousal perception of family dysfunction and quality of life are indirectly linked to hazardous drinking through their association with domestic violence as shown in the figure above. Debt in the family is likely to be related to hazardous drinking

directly, and though associated with domestic violence significantly, its role is likely to be indirect through drinking behavior.

5.2 QUALITATIVE ANALYSIS

Though no qualitative study methods were used during the study, copious field notes were collected. Given below is a summary of data from the field notes.

Status of women in the society

During data collection, many respondents could not be identified by their names alone or even coupled with their husbands' names. The father in law's name and husband's occupation were used to identify women. The community had no trouble identifying women who had leadership posts in self-help groups and women who worked in the 100 days' work (MGNREGA).

In a few instances, married women were using first names other than their own names. On further enquiry it was found that the new names had been given by them in laws for ease of use. One mother in law said "It is difficult for me to remember and call her by her real name, so we call her by this name".

These instances indicate that the visible identity of a married woman in the community is only as a daughter in law and many women do not have an individual identity.

Domestic violence

Most women who experienced domestic violence also, found ways to justify it. "He only hits me when I irritate him", "He hits me when I do something wrong", "He hits

me only when he is drunk" were common answers. These comments are indicative of the social acceptance or social sanction for wife beating. The pain experienced by these women is difficult to quantify.

Some women felt social restrictions more hurtful than physical violence "I wish he would let me visit my parents, I don't mind if he hits me". "I can't bear it when he shouts at me in front of the street, I don't mind when he hits me inside the house". "I have to go sleep in the neighbor's house when he comes home drunk to not get hit". These sentiments were echoed by several women.

Factors influencing domestic violence.

Some women with history of domestic violence in the past, did not experience violence currently. The birth of a child, especially a son seemed to reduce the domestic violence in some families. However, this was not a universal response. "After my son was born my husband has not hit me". "My children stop him from hitting me now", "My son questions him when he tries to hit me, so he just walks out". "If I had a son he would protect me from my husband", were some of the sentiments expressed.

6 DISCUSSION

Excessive alcohol consumption has recently emerged as a widespread social evil in India and is getting renewed attention with several women's groups calling for control and prohibition of alcohol sales. The aim of this study was to delineate the effects of hazardous drinking on the family and its functioning and in the process to estimate the prevalence of hazardous drinking pattern among married men. Initial examination of literature on the topic, showed that the deleterious effects of excessive alcohol consumption on health have been studied in depth. Further research in the area of alcohol misuse is focused on treating the physical effects of excessive alcohol consumption including dependence. The indirect effects of alcohol misuse especially the burden on their family however, have not been investigated in detail.

In order to assess the impact of hazardous drinking on family, the study was planned and conducted in two phases. In the first phase, a sample of 750 men were enrolled and interviewed to assess the prevalence of hazardous drinking. Following this, in the second phase the wives of a sample of 150 phase 1 respondents were enrolled, and were then interviewed on their family and social details.

In order to measure family functioning, several parameters were used. The spouse's perception of family support measured by the family APGAR questionnaire, the presence of common mental health disorders measured by the GHQ12 questionnaire and the wife's Quality of life as measured by the WHO-QOL BREF scale were the main subjective measures used to indicate level of functioning of the family. In

addition, presence of domestic violence as measured by the HITS questionnaire, presence of school dropouts among children were also taken as indicators.

The analysis of the results of the first phase of the study revealed that the prevalence of hazardous drinking among married men in the 25-60 years' age group is 31.5% and the prevalence of alcohol dependence is 7%. A previous study in the Kaniyambadi block published in 2009 had shown a prevalence of hazardous drinking of 14.2% (24). Even though the current study was conducted only among married men, the prevalence of hazardous drinking is considerably higher. A significant proportion of married men in the CHAD programme database, from which the sample was selected were unavailable due to their jobs. These jobs included nonagricultural unskilled work as well as higher occupation categories like clerical and army jobs. A large number of eligible men from a few clusters, refused consent to participate in the study and it is likely that men who had refused consent consumed alcohol excessively. Hence there is a probability that the prevalence of hazardous alcohol consumption prevalence in the community is an underestimate.

In phase two of the study, 150 wives were selected from all three drinking categories by simple random sampling. While comparing the baseline variables of the study sample, there are certain significant differences in the sociodemographic characteristics of wives of hazardous drinkers as compared to the rest. The Husband's education was lower in the hazardous drinkers' group, with more than half with education of middle school or lower, compared to around one fourth in the other two groups. Socioeconomic status was significantly lower in the hazardous drinking group, while approximately one fourth of respondents in both the non-drinkers and

non-hazardous drinkers' groups belonged to the upper middle socioeconomic status according to Kuppusamy scale. Mean monthly family income in the hazardous drinkers group was lower than the other two groups. These results were similar to previous studies which showed an adverse relationship between alcohol drinking behavior and financial status (122). However, it is noted that occupational status of the respondent and the occupation of the husband were similar in all drinking behavior groups. Other variables like loan in family, membership in self-help groups, type and duration of marriage were also similar across all three groups.

Looking at the measures of family functioning, we considered several outcome measures.

Wives' perception of family functioning and quality of life were subjective components, while presence of domestic violence, presence of common mental health disorders and school drop-out rates in children were recorded as quantifiable measures of family functioning.

There were very few dropouts among the children of the respondents and hence this variable was not used in the final analysis. A study in Mumbai had shown that school drop-out rates were higher among children of alcoholics (115), however that difference was not observed in this study. The government's successful implementation of schemes to ensure universal education may be considered as the reason behind this.

Similarly, presence of common mental health disorders among respondents was also low with only five women screening positive. This small number could not demonstrate a difference between various drinking patterns. Good social support and

a supportive health system is likely to be the reason for this. however the study did not explore this in detail.

Domestic violence was found to be significantly associated with hazardous drinking in husband. This is in accordance with previous studies done in India and elsewhere (59), (17). Alcohol consumption alone cannot be taken as the cause for domestic violence. Its roots lie deeper, in the society's patriarchal mindset and cultural values which accept domestic violence as an acceptable way to discipline women. However, the occurrence and severity of domestic violence is exacerbated by alcohol consumption.

The prevalence of perception of family dysfunction by the wife was higher in the hazardous drinkers group compared to the non-drinkers/ non-hazardous drinkers group, but the difference was not statistically significant. Since no studies on association between family functioning as alcohol consumption exist, there is a need for more studies, especially using qualitative study methods. Perception of family dysfunction by the wife was significantly associated with the presence of a loan in the family and domestic violence in the initial analysis. However, on regression model the association between presence of loan in the family and perception of family dysfunction disappears. Domestic violence emerges as the only factor independently associated with perception of poor family functioning.

Similarly, on analyzing the possible factors associated with wives' quality of life, hazardous drinking was not found to be a factor influencing quality of life. Presence of loan in the family and presence of domestic violence were the two variables independently influencing quality of life.

While both perception on family functioning by the wife using family APGAR and quality of life were not significantly associated with hazardous drinking, both these variables are found to be significantly associated with the presence of domestic violence. Therefore, we can conclude that there is an indirect association between perception of family dysfunction and hazardous drinking, which is evident through presence of domestic violence.

7 CONCLUSIONS

- The prevalence of hazardous alcohol consumption among married men in Kaniyambadi block was 31.5%.
- The prevalence of alcohol dependence among married men in Kaniyambadi block was 7%.
- Wives whose husbands had hazardous drinking behavior had 4.3 times higher risk of experiencing domestic violence compared to women whose husbands were either non-drinkers or non-hazardous drinkers.
- Family dysfunction and spouse's quality of life were directly linked to presence of domestic violence. Women who experienced domestic violence were 3.74 times more likely to perceive family dysfunction compared to women who did not experience domestic violence.
- Domestic violence was associated with lower socioeconomic status (OR=2.1) and presence of loan in the family in addition to hazardous drinking.
- Women with loan in the family were 2.7 times more likely to have a lower quality of life, compared to those with no loan. Women who experienced domestic violence were 12.5 times more likely to have a lower quality of life, compared to women who did not.

8 RECOMMENDATIONS

- Further studies are needed to study the effects of hazardous drinking on family functioning. Family functioning cannot be completely assessed by means of quantifiable variables. Hence qualitative research methods and a combination of subjective and objective tools are needed to gain a better understanding of alcohol drinking behavior and its effects on interpersonal family relationships and overall family functioning
- Since alcohol behavior of an individual may not remain constant over their lifetime, the change in drinking behavior can also influence functioning of the family. Longitudinal studies to evaluate the change in drinking pattern and its effect on family functioning, and coping behavior of the family are needed. These will be useful to develop and evaluate various counselling interventions for the family.
- No studies have examined the influence of social support and supportive health care systems on the family coping with stress related to a family member's substance and alcohol misuse disorders. Further studies are needed in this area.

9 LIMITATIONS

- Only the current drinking pattern of the husband was considered in this study. The previous drinking behavior and its influence were not taken into account.
- Since the prevalence of hazardous drinking was based on self-reporting by the respondents, this prevalence could be an underestimate because of hidden drinkers who might not have revealed their accurate drinking pattern.
- Since only currently married men and their wives were included as participants in this study, dysfunction measured can be assumed to be an underestimate. This is because alcohol use/ abuse may be a reason for separation and divorce.
- Since the women enrolled as respondents were only wives of men who have consented to participate in the first phase of the study the estimates of prevalence of family dysfunction is expected to be much lower than reality.
- The respondents in the second phase of the study, often revealed the drinking behavior of their husband during the course of the interview. Hence blinding the principle investigator to the drinking pattern of husbands was not successful.

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11 ANNEXURES

ANNEXURE I – AUDIT QUESTIONNAIRE AND PROFORMA FOR PHASE 1

Impact of hazardous drinking on family functioning in rural south India- a cross sectional study

1. Study.no: A___ 2. Date:__/__/___
3. NAME
4. MARITAL STATUS 5. AGE:_____
   1. married and living together
   2. divorced
   3. separated
   4. widowed

6.If separated how long continuously living separate ——- Months/years

7. Education ____ (last completed grade)

8. Occupation _____

Code_____

	Code for occupation	
1	Unemployed	
2	Unskilled worker	
3	Semi-skilled	
4	Skilled	
5	Clerical, shop-owner, farmer	
6	Semi-professional	
10	Professional	

AUDIT QUESTIONNAIRE

1.How often do you have a drink containing alcohol

0	NEVER	
1	MONTHLY	
2	2-4 TIMES A MONTH	
3	2-3 TIMES A WEEK	
4	4 OR MORE TIMES A WEEK	

2) How many drinks containing alcohol do you drink on a typical day when you are drinking? (1 standard drink is 30 ml of hard liquor or 300 ml of beer. Question to be asked in terms of number of quarters (180 ml) consumed and converted into standard drinks. For eg. 1 quarter is 6 standard drinks)

0	1 or 2	
1	3 or4	
2	5 or 6	
3	7 to 9	
4	10 or more	

3) How often do you have 6 or more drinks in one occasion(1 quarter)

0	Never	
1	Less than monthly	
2	Monthly	
3	Weekly	
4	Daily or almost daily	

4) How often during the past year have you found that you were not able to stop drinking once you started

0	Never	
1	Less than monthly	
2	Monthly	
3	Weekly	
4	Daily or almost daily	

5)How often during the past year have you failed to do what was normally expected of you because of drinking?

0	Never	
1	Less than monthly	
2	Monthly	
3	Weekly	
4	Daily or almost daily	

6) How often during the past year have you needed a first drink in the morning to get yourself going after a heavy drinking session

0	Never	
1	Less than monthly	
2	Monthly	
3	Weekly	
4	Daily or almost daily	

7) How often during the past year have you had a feeling of guilt or remorse after drinking

0	Never	
1	Less than monthly	
2	Monthly	
3	Weekly	
4	Daily or almost daily	

8)) How often during the past year have you been unable to remember what happened the night before because you had been drinking

0	Never	
1	Less than monthly	
2	Monthly	
3	Weekly	
4	Daily or almost daily	

9) Have you or someone else been injured as a result of your drinking?

0	No	
2	Yes , but not in the past year	
4	Yes in the past year	

10) Has a relative or friend or a doctor or other health worker been concerned about your drinking and suggested you cut down?

0	No	
2	Yes , but not in the past year	
4	Yes in the past year	

ANNEXURE II - PROFORMA FOR DATA COLLECTION FOR PHASE 2

Impact of hazardous drinking on family functioning in Rural South India- a cross sectional study.

1. Study no. B__
2. Husband's study no.A___ 3. Date __/__/____
3. Name:_____
4. Husband's name:_____
5. Village name:_____
6. Street name:_____
7. Age : ___ years
8. Education of head of family

1	Illiterate	
2	Primary school	
3	Middle school	
4	High school	
5	Post high school diploma	
6	Graduate or post graduate	
7	Professional/ honours	

9. Occupation of the head of the family: _____

1	Unemployed	
2	Unskilled worker	
3	Semi-skilled	
4	Skilled	
5	Clerical, shop-owner, farmer	

6	Semi-professional	
10	Professional	

10. Approximate family income per month Rs. _____
11. Type of house
    1. own house with 5 or more rooms
    2. Own house with 3-4 rooms
    3. Rented/Govt. house with 5 or more rooms
    4. Own house with 1-2 rooms
    5. Rented/Govt. house with 3-4 rooms
    6. Rented/Govt. house with 1-2 rooms
    7. Own tiled house
    8. Rented tiled house
    9. thatched hut

12. Does your family have any outstanding loan | Yes | No |
13. Education of the respondent:_____(last grade completed) code __
14. What is your current employment
    1-housewife
    2-employed
15. If employed currently what do you work as _____ code___
16. How much do you earn per month? Rs _____
17. Did you ever have a different employment? | Yes | No |
18. If yes what did you work as _____ code__
19. How much did you earn in the previous work Rs_____
20. Do you belong to any self- help group | Yes | No |
21. If yes, Do you hold any leadership post in the self- help group

Marital details

22. For how many years have you been married _____ yrs

23. Type of marriage

    1. Arranged 2. Love marriage

24. Is your husband a near relation

Yes	No

If yes how 1. Cousin

2. uncle

3. others _____

Children

25. Number of living children

26. Details

S.no	**Age**	**Sex**	**Education(completed grade**	**Occupation**

27. If any children have dropped out of school before 10th grade then please give the reason _____

Personal details

28. Do you have any chronic medical illness?

Yes	No

29. If yes details

- **1.** Hypertension
- **2.** Diabetes
- **3.** Bronchial asthma/COPD
- **4.** Others_____

30. Do you currently use any of the following

    1. Cigarette/beedi
    2. Alcohol
    3. Chewing tobacco

4. Others_____

31. Have you ever used any of the following substances
    1. Cigarette/beedi
    2. Alcohol
    3. Chewing tobacco
    4. Others_____
32. Type of family
    1. Joint family
    2. Extended family
    3. Nuclear family
33. No.of members in the family_____
34. Do any of your children use any of the following
    1. Cigarette/beedi
    2. Alcohol
    3. Chewing tobacco
    4. Others_____
35. GHQ-12 Score
36. Qol-Bref Score
37. Hits score
38. Family apgar score

ANNEXURE III- FAMILY APGAR QUESTIONNAIRE

Family APGAR

Adaptation, Partnership, Growth, Affection, and Resolve

answer options : always (2), sometimes (1) and never (0)

1. I am satisfied, because I can count on my family in the case I need help when there is a disturbance or preoccupation.
2. I am satisfied with the way my family and I talk and share problems.
3. I am satisfied with the way my family accepts and supports my desires to begin or to search for new activities.
4. I am satisfied with the way my family demonstrates affection and reacts to my emotions, such as anger, regret or love.
5. I am satisfied with the way my family and I spend time together.

Total –

FAMILY functioning-

(0 to 4, elevated family dysfunction;

from 5 to 6, moderate family dysfunction;

and from 7 to 10, good family functioning)

ANNEXURE IV- WHO QOL BREF QUESTIONNAIRE

WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

Do you have any comments about the assessment?

_____

_____

[The following table should be completed after the interview is finished]

		Equations for computing domain scores	Raw score	Transformed scores*	
				4-20	0-100
27.	**Domain 1**	(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:
28.	**Domain 2**	Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26) ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:
29.	**Domain 3**	Q20 + Q21 + Q22 ☐ + ☐ + ☐	a. =	b:	c:
30.	**Domain 4**	Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25 ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐ + ☐	a. =	b:	c:

ANNEXURE V- GHQ 12 QUESTIONNAIRE

GHQ-12

Have you recently –

Been able to concentrate on whatever you're doing	Better than usual	Same as usual	Less than usual	Much less than usual
Lost much sleep over worry	Not at all	No more than usual	Rather more than usual	Much more than usual
Felt that you are playing a useful part in things	More so than usual	Same as usual	Less so than usual	Much less than usual
Felt capable of making decisions about things	More so than usual	Same as usual	Less so than usual	Much less than usual
Felt constantly under strain	Not at all	No more than usual	Rather more than usual	Much more than usual
Felt that you could'nt overcome your difficulties	Not at all	No more than usual	Rather more than usual	Much more than usual
Been able to enjoy your normal day to day activities	More so than usual	Same as usual	Less so than usual	Much less than usual
Been able to face up to your problems	More so than usual	Same as usual	Less so than usual	Much less than usual
Been feeling unhappy and depressed	Not at all	No more than usual	Rather more than usual	Much more than usual
Been losing confidence in yourself	Not at all	No more than usual	Rather more than usual	Much more than usual
Been thinking of yourself as a worthless person	Not at all	No more than usual	Rather more than usual	Much more than usual
Been feeling reasonably happy, all things considered	More so than usual	Same as usual	Less so than usual	Much less than usual

Total-

ANNEXURE VI- HITS SCREENING QUESTIONNAIRE FOR DOMESTIC VIOLENCE

"HITS" A domestic violence screening tool for use in the community

HITS Tool for Intimate Partner Violence Screening:

How often does your partner?

	Never (1)	Rarely(2)	Sometimes(3)	Fairly often(4)	Frequently(5)
1. Physically hurt you					
2. Insult or talk down to you					
3. Threaten you with harm					
4. Scream or curse at you					

Total score-

(A score of greater than 10 is considered positive.)

ANNEXURE VII- INFORMATION SHEET PHASE 1 ENGLISH

Information Sheet

Impact of hazardous drinking on family functioning in Rural South India- a cross sectional study.

The following information sheet is provided to inform you about this research project and your participation in it. Please read this form carefully. You can ask any question regarding this and we will answer to the best of our ability. A copy of this sheet will be given to you.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time after it starts.

What is the purpose of this study?

In our society alcohol is used as a recreation, for socialising and for alleviating pain and anxiety. Unfortunately alcohol also has ill effects. When taken in excess it affects the health of the person. Sometimes it also affects the other members of the family and may even affect the community. The purpose of this study is to find out if excessive alcohol consumption in men affects their families especially their wife and children. The results of this study can be used to develop programmes for the well being of affected families and the community.

What methods will be followed?

We will interview a large number of men and identify their alcohol drinking pattern. From this large group we will randomly choose a smaller number of people . We will then meet their wives to ask more questions about their family.

What is the Approximate duration of study ?

This study will be conducted over a period of 6 months

What will it cost me?

You will not be required to spend money for this study. We will not ask you to travel anywhere.

What are the risks that I face if I participate in this study?

You may be uncomfortable with the questions that we ask as they deal with your drinking behaviour. If you are too distressed with any questions you may refuse to answer the question.

What are the benefits of this study

The results of this study can be used to develop programmes to help families affected by alcohol and to improve the well being of the community.

What compensation will I get for participating in the study?

We will not give money to answer questions or be a part of this study.

Can I refuse to participate or withdraw from the study?

If you do not want to answer questions or do not want us to contact or meet regarding this particular study you can refuse now or withdraw from the study at any time. This will not affect the medical care provided to you by CHAD hospital or CMC or by members of the study team

What happens if I choose to withdraw from the study participation?

The information you give us will not be used by us. All collected information will be destroyed.

Who will know my personal details?

All efforts, within reason, will be made to keep your personal information in the research record confidential. It will not be shared with anyone else.

Privacy:

Your identity will not be revealed to anyone else; however summary data of the study may be shared with Institutional Review Board of Christian medical college and used for publication for scientific purpose.

ANNEXURE VIII- INFORMATION SHEET FOR PHASE 1 TAMIL

தகவல் படிவம்

அபாயகரமான குடி பழக்கத்தினால் குடும்பச் செயற்பாட்டில் ஏற்படும் தாக்கத்தை கண்டறிய - தென் இந்தியாவில் கிராமிய பகுதியில் நடைபெறும் குறுக்கு வெட்டு ஆய்வு.

பின்வரும் தகவல் தாள் இந்த ஆராய்ச்சி பற்றியும் இதில் உங்கள் பங்கு பற்றியும் நீங்கள் தெரிந்துகொள்ள வழங்கப்படுகிறது. கவனமாக இந்த வடிவத்தை படிக்கவும். இது சம்பந்தமாக எந்த கேள்வியையும் நீங்கள் கேட்கலாம். நாங்கள் எங்களால் இயன்ற அளவுக்கு விடையளிப்போம்

இந்த ஆய்வில் உங்கள் பங்கேற்ப்பு தனர்வத்தின் அடிபடையில் ஆனது. நீங்கள் ஆய்வு தொடங்கிய பிறகு, எந்த நேரத்திலும் . ஆய்வில் இருந்து விலகி கொள்ளலாம்..

இவ்வாய்வின் நோக்கம் என்ன?

நம் சமூகதில் மது பொழுதுபோக்குகாகவும் சமூகதில் ஒட்டுறவு ஏற்படவும் ,வலி மற்றும் கவலையை மட்டுபடுத்தவும் உபயோகபடுத்தபடுகிறது .துர அதிர்ஷ்டவசமாக , மது தீய விளைவுகளை பெற்றுள்ளது .சில நேரங்களில் குடும்பத்தில் உள்ள மற்றவர்களையும் , சமுகத்தில் உள்ளவர்களையும் இந்த பழக்கம் பாதிக்கிறது .

இந்த ஆய்வின் நோக்கம் ஆண்களின் அபாயகரமான குடிபழக்கம் அவர்களின் குடும்பங்களை குறிப்பாக அவர்களின் மனைவி மற்றும் குழந்தைகளை பாதிக்கிறதா என்று கண்டறிய தான் . இந்த ஆய்வின் முடிவுகள் பாதிக்கப்பட்ட குடும்பங்கள் மற்றும் சமூகங்களின் நலத்திற்கான திட்டங்களை உருவாக்க பயன்படலாம் .

எவ்வகையான முறைகள் கையாள படும்?

நாங்கள் திரளான ஆண்களுக்கு நேர்காணல் நடத்தி அதன்மூலம் அவர்களின் குடுபழக்க முறையினை கண்டறிவோம் .இப்பெரிய குழுவிலிருந்து சிறிய எண்ணிக்கையிலான மக்களை குறிப்பான நோக்கம் ஏதுமற்ற முறையில் தேர்ந்தெடுப்போம் .பிறகு அவர்களின் குடும்பங்களை பற்றி கேள்விகள் கேட்பதற்கு அவர்களின் மனைவிகளை சந்திப்போம் .

ஆய்வு நடைபெறும் காலகட்டம் என்ன?

இந்த ஆய்வு 6 மாதங்களாக நடைபெறும்

எனக்கு எவ்வளவு செலவு ஆகும் ?

இந்த ஆய்வில் நீங்கள் பங்கேற்பதினால் உங்களுக்கு எந்த செலவும் ஏற்படாது. நாங்கள் உங்களை பயணம் செய்து எங்கேயும் வர சொல்ல மாட்டோம்.

இந்த ஆய்வில் பங்கேற்பதால் நான் எதிர்கொள்ளும் பிரச்சனைகள் என்ன?

நாங்கள் கேட்கும் கேள்விகள் உங்கள் குடிபழக்கத்தை சார்ந்து இருப்பதினால் இந்த கேள்விக ள் அசௌகரி யத்தை உண்டாக்கலாம். எவ்வொரு வினாகுரித்தும் நீங்கள் வேதனை அடைந்தால் அந்த வினாவிற்கு நீங்கள் பதிலளிக்க மறுக்கலாம்

இந்த ஆய்வினால் எதிர்பார்க்கும் நலன்கள் என்ன?

இந்த ஆய்வின் முடிவுகள் குடியால் பாதிக்கப்படும் குடும்பங்களுக்கு உதவும் திட்டங்களை உருவாக்க மற்றும் சமூகதின் நன்மைக்காக பயன்படலாம்

ஆய்வில் பங்கு பெற இழப்பீடு உண்டா?

நாம் கேள்விகளுக்கு பதிலளிக்க அல்லது இந்த ஆய்வின் ஒரு பகுதியாக இருக்க பணம் கொடுக்க முடியாது.

நான் இந்த ஆய்வில் பங்கேற்க மறுக்கலாமா ?

நீங்கள் இந்த கேள்விகளுக்கு பதிலளிக்க விருப்பமில்லை என்றாலும் இதுகுறித்து உங்களை நாங்கள் சந்திக்க அல்லது'தொடர்புகொள்ள வேண்டாம் என்றாலும் இந்த ஆய்வில் பங்குபெற இப்பொழுதே நீங்கள் மறுக்கலாம் .மேலும் எந்நேரம் வேண்டுமானாலும் இந்த ஆய்வில் இருந்து நீங்கள் விலகலாம் . விலகுவதால் CMC அல்லது CHAD அல்லது ஆய்வு உறுப்பினர்கள் உங்களுக்கு அளிக்கும் மருத்துவ உதவி பாதிக்காது

நான் ஆய்விலிருந்து விலக தேர்வு செய்தால் என்ன நடக்கும்?

உங்கள் தகவலை நாங்கள் பயன்படுத்தமாட்டோம் . அனைத்து சேகரிக்கப்பட்ட தகவல்க ளும் அழிக்கப்படும்.

எனது சுயவிவரங்களை யார் தெரிந்து கொள்வர்?

உங்கள் தனிப்பட்ட தகவல்களை ரகசிய மாக வைக்க அனைத்து முயற்சிகளும் எடுக்கப்படும். உங்கள் தனிப்பட்ட தகவல்கள் வேறு எவரிடமும் தெருவிக்கபடாது

ரகசியக்காப்பு:

உங்கள் அடையாளம்வேறு யாரிடமும் தெரிவிக்கபடாது எனினும் ஆய்வின் விவரம் கிரிஸ்துவர் மருத்துவ கல்லூரி நிறுவன மதிப்புரை கழகத்தோடு பகிர்ந்து கொள்ளப்படும் மேலும் அறிவியல் நோக்க வெளியீட்டில் பயன்படுத்தப்படும்.

ANNEXURE IX- INFORMATION SHEET FOR PHASE 2 ENGLISH

Information Sheet

Impact of hazardous drinking on family functioning in Rural South India- a cross sectional study.

The following information sheet is provided to inform you about this research project and your participation in it. Please read this form carefully. You can ask any question regarding this and we will answer to the best of our ability. A copy of this sheet will be given to you.

We have already asked your husband questions on alcohol use. As the second part of our study we want to ask you questions about your family and your health.

Your participation in this research study is voluntary. You are also free to withdraw from this study at any time after it starts.

What is the purpose of this study?

In our society alcohol is used as a recreation, for socialising and for alleviating pain and anxiety. Unfortunately alcohol also has ill effects. When taken in excess it affects the health of the person. Sometimes it also affects the other members of the family and may even affect the community. The purpose of this study is to find out if excessive alcohol consumption in men affects their families especially their wife and children. The results of this study can be used to develop programmes for the well being of affected families and the community.

What methods will be followed?

We will interview a large number of men and identify their alcohol drinking pattern. From this large group we will randomly choose a smaller number of men. We will then their meet their wives to ask more questions about their family.

What is the Approximate duration of study ?

This study will be conducted over a period of 6 months

What will it cost me?

You will not be required to spend money for this study. We will not ask you to travel anywhere.

What are the risks that I face if I participate in this study?

You may be uncomfortable with the questions that we ask as they are related to your family life.. If you are too distressed with the questions you may refuse to answer that question.

What are the benefits of this study?

The results of this study can be used to develop programmes to help families affected by alcohol and to improve the well being of the community.

What compensation will I get for participating in the study?

We will not give money to answer questions or be a part of this study.

Can I refuse to participate or withdraw from the study?

If you do not want to answer questions or do not want us to contact or meet regarding this particular study you can refuse now or withdraw from the study at any at any time. This will not affect the medical care provided to you by CHAD hospital or CMC or by members of the study team

What happens if I choose to withdraw from the study participation?

The information you give us will not be used by us. All collected information will be destroyed.

Who will know my personal details?

All efforts, within reason, will be made to keep your personal information in the research record confidential. It will not be shared with anyone else.

Privacy:

Your identity will not be revealed to anyone else; however summary data of the study may be shared with Institutional Review Board of Christian medical college and used for publication for scientific purpose.

ANNEXURE X- INFORMATION SHEET FOR PHASE 2 -TAMIL

தகவல் படிவம்

அபாயகரமான குடி பழக்கத்தினால் குடும்பச் செயற்பாட்டில் ஏற்படும் தாக்கத்தை கண்டறிய - தென் இந்தியாவில் கிராமிய பகுதியில் நடைபெறும் குறுக்கு வெட்டு ஆய்வு.

பின்வரும் தகவல் தாள் இந்த ஆராய்ச்சி பற்றியும் இதில் உங்கள் பங்கு பற்றியும் நீங்கள் தெரிந்துகொள்ள வழங்கப்படுகிறது. கவனமாக இந்த வடிவத்தை படிக்கவும். இது சம்பந்தமாக எந்த கேள்வியையும் நீங்கள் கேட்கலாம். நாங்கள் எங்களால் இயன்ற அளவுக்கு விடையளிப்போம்

நாங்கள் ஏற்கனவே உங்கள் கணவரை சந்தித்து அவரிடம் குடி பழக்கத்தை பற்றி கேள்விகள் கேட்டுள்ளோம் .இவ்வாய்வின் இரண்டாம் பகுதியாக உங்களிடம் உங்கள் குடும்பத்தை பற்றியும் , உடல் நிலை பற்றியும் கேள்விகள் கேட்க விரும்புகிறோம்

இந்த ஆய்வில் உங்கள் பங்கேற்ப்பு தனர்வத்தின் அடிபடையில் ஆனது. நீங்கள் ஆய்வு தொடங்கிய பிறகு, எந்த நேரத்திலும் . ஆய்வில் இருந்து விலகி கொள்ளலாம்..

இவ்வாய்வின் நோக்கம் என்ன?

நம் சமூகதில் மது பொழுதுபோக்குகாகவும் சமூகதில் ஒட்டுறவு ஏற்படவும் ,வலி மற்றும் கவலையை மட்டுபடுத்தவும் உபயோகபடுத்தபடுகிறது .துர அதிர்ஷ்டவசமாக , மது தீய விளைவுகளை பெற்றுள்ளது .சில நேரங்களில் குடும்பத்தில் உள்ள மற்றவர்களையும் , சமுகத்தில் உள்ளவர்களையும் இந்த பழக்கம் பாதிக்கிறது .

இந்த ஆய்வின் நோக்கம் ஆண்களின் அபாயகரமான குடிபழக்கம் அவர்களின் குடும்பங்களை குறிப்பாக அவர்களின் மனைவி மற்றும் குழந்தைகளை பாதிக்கிறதா என்று கண்டறிய தான் . இந்த ஆய்வின்

முடிவுகள் பாதிக்கப்பட்ட குடும்பங்கள் மற்றும் சமூகங்களின் நலத்திற்கான திட்டங்களை உருவாக்க பயன்படலாம் .

எவ்வகையான முறைகள் கையாள படும்?

நாங்கள் திரளான ஆண்களுக்கு நேர்காணல் நடத்தி அதன்மூலம் அவர்களின் குடுபழக்க முறையினை கண்டறிவோம் .இப்பெரிய குழுவிலிருந்து சிறிய எண்ணிக்கையிலான மக்களை குறிப்பான நோக்கம் ஏதுமற்ற முறையில் தேர்ந்தெடுப்போம் .பிறகு அவர்களின் குடும்பங்களை பற்றி கேள்விகள் கேட்பதற்கு அவர்களின் மனைவிகளை சந்திப்போம் .

ஆய்வு நடைபெறும் காலகட்டம் என்ன?

இந்த ஆய்வு 6 மாதங்களாக நடைபெறும்

எனக்கு எவ்வளவு செலவு ஆகும் ?

இந்த ஆய்வில் நீங்கள் பங்கேற்பதினால் உங்களுக்கு எந்த செலவும் ஏற்படாது. நாங்கள் உங்களை பயணம் செய்து எங்கேயும் வர சொல்ல மாட்டோம்.

இந்த ஆய்வில் பங்கேற்பதால் நான் எதிர்கொள்ளும் பிரச்சனைகள் என்ன?

நாங்கள் கேட்கும் கேள்விகள் உங்கள் குடும்ப வாழ்க்கை பற்றி இருப்பதினால் இந்த கேள்விக ள் அசௌகரி யத்தை உண்டாக்கலாம். எவ்வொரு வினாகுரித்தும் நீங்கள் வேதனை அடைந்தால் அந்த வினாவிற்கு நீங்கள் பதிலளிக்க மறுக்கலாம்

இந்த ஆய்வினால் எதிர்பார்க்கும் நலன்கள் என்ன?

இந்த ஆய்வின் முடிவுகள் குடியால் பாதிக்கப்படும் குடும்பங்களுக்கு உதவும் திட்டங்களை உருவாக்க மற்றும் சமூகதின் நன்மைக்காக பயன்படலாம்

ஆய்வில் பங்கு பெற இழப்பீடு உண்டா?

நாம் கேள்விகளுக்கு பதிலளிக்க அல்லது இந்த ஆய்வின் ஒரு பகுதியாக இருக்க பணம் கொடுக்க முடியாது.

நான் இந்த ஆய்வில் பங்கேற்க மறுக்கலாமா ?

நீங்கள் இந்த கேள்விகளுக்கு பதிலளிக்க விருப்பமில்லை என்றாலும் இதுகுறித்து உங்களை நாங்கள் சந்திக்க அல்லது'தொடர்புகொள்ள வேண்டாம் என்றாலும் இந்த ஆய்வில் பங்குபெற இப்பொழுதே நீங்கள் மறுக்கலாம் .மேலும் எந்நேரம் வேண்டுமானாலும் இந்த ஆய்வில் இருந்து நீங்கள் விலகலாம் . விலகுவதால் CMC அல்லது CHAD அல்லது ஆய்வு உறுப்பினர்கள் உங்களுக்கு அளிக்கும் மருத்துவ உதவி பாதிக்காது

நான் ஆய்விலிருந்து விலக தேர்வு செய்தால் என்ன நடக்கும்?

உங்கள் தகவலை நாங்கள் பயன்படுத்தமாட்டோம் . அனைத்து சேகரிக்கப்பட்ட தகவல்க ளும் அழிக்கப்படும்.

எனது சுயவிவரங்களை யார் தெரிந்து கொள்வர்?

உங்கள் தனிப்பட்ட தகவல்களை ரகசிய மாக வைக்க அனைத்து முயற்சிகளும் எடுக்கப்படும். உங்கள் தனிப்பட்ட தகவல்கள் வேறு எவரிடமும் தெருவிக்கபடாது

ரகசியக்காப்பு:

உங்கள் அடையாளம்வேறு யாரிடமும் தெரிவிக்கபடாது எனினும் ஆய்வின் விவரம் கிரிஸ்துவர் மருத்துவ கல்லூரி நிறுவன

ANNEXURE XI- WRITTEN INFORMED CONSENT FORM -ENGLISH

Written Informed Consent Form

Study Title: Impact of hazardous drinking on family functioning in rural south India- a cross sectional study

Study no: _____

Subject's Initials: _____ Subject's Name: _____

Date of Birth / Age: _____

(Subject)

(I) I confirm that I have read and understood the information sheet / the information sheet has been read to me in tamil ,dated _____ for the above study. I understand that the information i provide will be helpful for understanding the problems caused by alcohol in the family. I also confirm that I have had the opportunity to ask questions and my questions and doubts have been clarified [ ]

(II) I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason and without my medical care or legal rights being affected. [ ]

(III) I understand that the investigator of this study, others working on the investigator's behalf, the Ethics Committee and the regulatory authorities will not need my permission to look at the information I provide for this study. I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published. [ ]

(IV) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s). [ ]

Yes, I agree to take part in the above study. [ ]
or
No, I do not want to take part in the above study[ ]

Signature/thumb impression of the subject:

Date: ____/____/_____

Signatory's Name: _____

Signature of the Investigator: _____

Date: ____/____/_____

Name of investigator:

Signature of the witness

Date;____/___/_____

Name of the witness

ANNEXURE XII- WRITTEN INFORMED CONSENT FORM- TAMIL

எழுத்தில் தகவல் தெரிவிக்கபட்ட ஒப்புதல் படிவம்

ஆய்வின் தலைப்பு: அபாயகரமான குடி பழக்கத்தினால் குடும்பச் செயற்பாட்டில் ஏற்படும் தாக்கத்தை கண்டறிய - தென் இந்தியாவில் கிராமிய பகுதியில் நடைபெறும் குறுக்கு வெட்டு ஆய்வு.

ஆய்வு எண் ☐

பங்கேற்பாளரின் முதல் எழுத்து_____

பங்கேற்பாளரின் பெயர்:_____

பிறந்த தேதி / வயது:_____

(பங்கேற்பாளர்)

i) மேலே குறிப்பிடப்பட்டுள்ள ஆய்விற்காக கொடுக்கப்பட்ட தகவல் படிவத்தை தேதி அன்று நன்கு படித்து புரிந்து கொண்டேன். நான் வழங்கும் தகவல்கள் குடும்பத்தில் குடிபழக்கதினால் ஏற்படும் பிரச்சினைகளை புரிந்து கொள்ள பயனுள்ளதாக இருக்கும் என்று தெரிந்து கொண்டேன் . .மற்றும் எனக்கு கேள்விகள் கேட்க வாய்ப்பு அளிக்கப்பட்டது என்பதையும் உறுதி செய்கிறேன் . [ ]

ii) இந்த ஆய்வில் என்னுடைய பங்கேற்பு தன்னிச்சையானது என்பதையும் என்னுடைய மருத்துவ பராமரிப்பு நியாய உரிமைகள் பாதிக்கபடாத அளவிற்கு எந்த காரணமும் இன்றி எந்த நேரத்திலும் இந்த ஆய்விலிருந்து விலகி கொள்ளலாம் என்பதையும் புரிந்து கொண்டேன் . [ ]

iii) நான் இந்த ஆய்வில் இருந்து விலகி கொண்டாலும் ,ஆய்வாளரும் ,ஆய்வாளர்க்கு உதவுபவர் நன்நெறி காக்கும் குழுவினர் மற்றும் வரைமுறை நிர்வாகிகள் நிகழ்கால ஆய்வு மற்றும் எதிர்காலதில் நிகழ்த்தப்படும் ஆய்வு சம்பந்தமாக எண்ணுடைய மருத்துவ பதிவுகளை பார்க்க என்னுடைய அனுமதி தேவையில்லை என்பதை

புரிந்து கொண்டேன் .இந்த அணுகுமுறைக்கு ஒப்புதல் அளிக்கிறேன் [ ]

iv). இந்த ஆய்வின் மூலம் எழும் எந்த ஒரு தகவலையும் அல்லது முடிவையும் பயன்படுத்த தடை செய்ய மாட்டேன் என்பதையும் , மேலும் இவை அறிவியல் சம்பந்தமான பயன்பாட்டுக்கு மட்டுமே பயன்படும் என்பதையும் நான் ஒப்பு கொல்கிறேன் . [ ]

நான் மேலே குறிபிடப்பட்டுள்ள ஆய்வில் கலந்து கொள்ள சம்மதிக்கிறேன் [ ]

அல்லது

மேலே குறிபிடப்பட்டுள்ள ஆய்வில் கலந்து கொள்ள எனக்கு சம்மதமில்லை [ ]

பங்கேற்பாளரின் கையொப்பம் அல்லது பெருவிரல் ரேகை

தேதி: ___/___/____

பெயர் _____

ஆய்வாளரின் கையொப்பம் : _____

தேதி: ___/___/____

பெயர் _____

சாட்சியாளர் கையொப்பம் : _____

தேதி: ___/___/____

பெயர் _____

ANNEXURE XIII- IRB CLEARANCE FORM

OFFICE OF RESEARCH
INSTITUTIONAL REVIEW BOARD (IRB)
CHRISTIAN MEDICAL COLLEGE, VELLORE, INDIA

Dr. B.J. Prashantham, M.A., M.A., Dr. Min (Clinical)
Director, Christian Counseling Center,
Chairperson, Ethics Committee.

Dr. Alfred Job Daniel, D Ortho MS Ortho DNB Ortho.
Chairperson, Research Committee & Principal

Dr. Biju George, MBBS., MD., DM
Deputy Chairperson,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

April 18, 2016

Dr. [redacted]
PG Registrar,
Department of Community Medicine,
Christian Medical College,
Vellore 632 004.

Sub: **Fluid Research grant project NEW PROPOSAL:**
Impact of hazardous drinking on family functioning in rural South India - across sectional study.
Martina Shalini, Emp. No. 21081, Community Medicine, Dr. Shantidani Minz, Emp. No. 14410, Professor, Community Medicine, Dr. Anuradha Rose, Emp. No. 28164, Assoc. Professor, Community Health..

Ref: IRB Min No: 9686 [OBSERVE] dated 20.10.2015

Dear Dr. [redacted],

The Institutional Review Board (**Blue**, Research and Ethics Committee) of the Christian Medical College, Vellore, reviewed and discussed your project titled "Impact of hazardous drinking on family functioning in rural South India - across sectional study" on October 20th 2015.

The Committee reviewed the following documents:

1. IRB Application format
2. Information Sheet Male and Female (English and Tamil)
3. Informed Consent Form (English and Tamil)
4. Questionnaire (English and Tamil)
5. Audit Questionnaire (English and Tamil)
6. FAMILY APGAR Questionnaire(English and Tamil)
7. Cvs of [redacted], Shantidani Minz, Anuradha Rose,
8. No. of documents 1 - 7

The following Institutional Review Board (**Blue**, Research & Ethics Committee) members were present at the meeting held on October 20th 2015 in the CREST/SACN Conference Room, Christian Medical College, Bagayam, Vellore 632002.

Ethics Committee Blue, Office of Research, 1st Floor, Carman Block, Christian Medical College, Vellore, Tamil Nadu 632 002
Tel: 0416 – 2284294, 2284202 Fax: 0416 – 2262788, 2284481 E-mail: research@cmcvellore.ac.in

Dr. B.J. Prashantham, M.A., M.A., Dr. Min (Clinical)
Director, Christian Counseling Center,
Chairperson, Ethics Committee.

Dr. Alfred Job Daniel, D Ortho MS Ortho DNB Ortho.
Chairperson, Research Committee & Principal

Dr. Biju George, MBBS., MD., DM
Deputy Chairperson,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

Name	Qualification	Designation	Affiliation
Dr. B. J. Prashantham	MA(Counseling Psychology), MA(Theology), Dr. Min(Clinical Counselling)	Chairperson, Ethics Committee, IRB. Director, Christian Counseling Centre, Vellore	External, Social Scientist
Dr. Nihal Thomas	MD, MNAMS, DNB(Endo), FRACP (Endo) FRCP(Edin) FRCP (Glasg)	Professor & Head, Endocrinology. Additional Vice Principal (Research), Deputy Chairperson (Research Committee), Member Secretary (Ethics Committee), IRB, CMC, Vellore	Internal, Clinician
Mrs. Pattabiraman	BSc, DSSA	Social Worker, Vellore	External, Lay Person
Dr. Rajesh Kannangai	MD, PhD.	Professor, Clinical Virology, CMC, Vellore	Internal, Clinician
Dr. Jayaprakash Muliyil	BSc, MBBS, MD, MPH, Dr PH (Epid), DMHC	Retired Professor, CMC, Vellore	External, Scientist &Epidemiologist
Mrs. Emily Daniel	MSc Nursing	Professor, Medical Surgical Nursing, CMC, Vellore	Internal, Nurse
Mrs. Sheela Durai	MSc Nursing	Professor, Medical Surgical Nursing, CMC, Vellore	Internal, Nurse
Mr. C. Sampath	BSc, BL	Advocate, Vellore	External, Legal Expert
Dr. Anuradha Rose	MBBS, MD, MHSC (Bioethics)	Associate Professor, Community Health, CMC, Vellore	Internal, Clinician
Dr. Vivek Mathew	MD (Gen. Med.) DM (Neuro) Dip. NB (Neuro)	Professor, Neurology, CMC, Vellore	Internal, Clinician
Dr. Chandrasingh	MS, MCH, DMB	Professor, Urology, CMC, Vellore	Internal, Clinician

Ethics Committee Blue, Office of Research, 1st Floor, Carman Block, Christian Medical College, Vellore, Tamil Nadu 632 002
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Dr. Biju George, MBBS., MD., DM
Deputy Chairperson,
Secretary, Ethics Committee, IRB
Additional Vice-Principal (Research)

Ms. Grace Rebecca	M.sc (Biostatistics)	Lecturer, Biostatistics, CMC, Vellore	Internal, Statistician
Dr. Simon Pavamani	MBBS, MD	Professor, Radiotherapy, CMC, Vellore	Internal, Clinician
Dr. Inian Samarasam	MS, FRCS, FRACS	Professor, Surgery, CMC, Vellore	Internal, Clinician
Dr. Balamugesh	MBBS, MD(Int Med), DM, FCCP (USA)	Professor, Pulmonary Medicine, CMC, Vellore	Internal, Clinician
Dr. Niranjan Thomas	DCH, MD, DNB (Paediatrics)	Professor, Neonatology, CMC, Vellore	Internal, Clinician
Dr. Mathew Joseph	MBBS, MCH	Professor, Neurosurgery, CMC, Vellore	Internal, Clinician
Dr. RatnaPrabha	MBBS, MD	Associate Professor, Clinical Pharmacology, CMC, Vellore.	Internal, Pharmacologist

We approve the project to be conducted as presented.

Kindly provide the total number of patients enrolled in your study and the total number of withdrawals for the study entitled: "Impact of hazardous drinking on family functioning in rural South India - across sectional study" on a monthly basis. Please send copies of this to the Research Office (research@cmcvellore.ac.in)

Fluid Grant Allocation:

A sum of Rs.28,068/- INR (Rupees Twenty eight Thousand Only) will be granted for 9 months.

Yours sincerely

Dr. Biju George
Secretary (Ethics Committee)
Institutional Review Board

Dr. BIJU GEORGE
MBBS., MD., DM.
SECRETARY - (ETHICS COMMITTEE)
Institutional Review Board,
Christian Medical College, Vellore - 632 002.

IRB Min No: 9686 [OBSERVE] dated 20.10.2015

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